

Table S-5
Summary of Impacts and Environmental Protection and Mitigation Measures

Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures ^a
WATER SUPPLY AND HYDROLOGY (Section 3.4)		
Facilities-Related Impacts		
Reliability of water supply facilities.		
<u>No Action/No Project Alternative.</u> Operations would be subject to times when high flows prevent spring installation, or flood flows result in damage to the facilities such that they become inoperable. Due to the extended operation period, these events would be expected to occur more frequently than under the existing condition.	Potentially significant and unavoidable.	No feasible mitigation available.
<u>Action Alternatives.</u> The year-round facilities would be placed above the 100-year flood level in the canyon and would be protected from high flood flows substantially reducing or eliminating the potential for reliability issues as compared to the existing or No Action/No Project Alternative conditions.	Significant beneficial impact.	None proposed.
Ability to meet PCWA water supply demands.		
<u>No Action/No Project Alternative.</u> PCWA currently has need of obtaining surplus water supplies from neighboring water districts as the existing condition seasonal pump station operations do not meet demand. PCWA's ability to obtain surplus water from other districts would vary from year-to-year and is not considered a reliable source. The extended operation of the seasonal pump station would potentially satisfy increased and projected demands until about 2008. However, due to capacity and operational period limitations, the seasonal pump station would not meet overall long-term objectives of providing a reliable, year-round water supply to satisfy current back-up supply needs and future demands associated with planned/approved development.	Short-term beneficial/long-term potentially significant.	No feasible mitigation available.
<u>Action Alternatives.</u> Increasing capacity and operational period for the American River pump station would supplement PCWA's Drum-Spaulding Project water supply sufficiently to meet water demands through about 2015, as compared to only 2008 under the No Action/No Project Alternative.	Beneficial impact.	None proposed.
Groundwater overdraft.		
<u>No Action/No Project Alternative.</u> PCWA likely would implement stringent water conservation policies that would reduce the amount of surface water provided to the agricultural and rural farms/ranchettes in western Placer County leading to increased use of groundwater and/or discontinued/changed farming operations. Although PCWA would continue to work toward development of alternative water supply options; the timing and the eventual availability of such supplies remains speculative. Current groundwater overdraft conditions would be exacerbated.	Potentially significant and unavoidable.	No feasible mitigation readily available.
^a Construction-related environmental protection measures would be included in the project contract specifications prior to contractor bidding.		

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
WATER SUPPLY AND HYDROLOGY (Section 3.4) (Continued)		
Groundwater overdraft (continued).		
<u>Action Alternatives.</u> The increased water supply from the year-round pump station would meet raw and treated water customer demands until approximately 2015; agricultural and rural users would not need to withdraw additional groundwater supply.	Less than significant.	None proposed.
Channel instability from backwater effects.		
<u>No Action/No Project Alternative.</u> The diversion/intake would be the same as the existing configuration and would not lead to a backwater effect or related effects upon channel stability.	Less than significant.	None proposed.
<u>Action Alternatives.</u> Under existing conditions, Tamaroo Bar rapids become inundated when river flows reach 6,000 cfs. Below 6,000 cfs, the backwater effect would increase water surface elevation by a minor amount; the effect would not result in channel stability effects at the Tamaroo Bar rapids, relative to the existing condition. Because the existing dewatered portion of the channel will be deepened and widened at the cofferdam, at higher flows, the backwater may be less than it is now. As part of final project design/pre-construction, additional site surveys and hydraulic modeling would be conducted to evaluate potential backwater effects. Preliminary design criteria is to not substantially alter conditions above Tamaroo Bar Rapids.	Less than significant.	None proposed.
Cumulative Facilities-Related Impacts		
The Action Alternatives would contribute to an improvement of water supply reliability that potentially could be further developed with future expansion of the facility for PCWA and GDPUD. Future expansion would require additional environmental review, resource agency consultations, and regulatory permitting.	Potentially beneficial.	
DIVERSION-RELATED IMPACTS		
<u>No Action/No Project Alternative Compared to Existing Condition.</u> The increased pump station diversion under the No Action/No Project Alternative would be less than evaluated for the Action Alternatives (see below). Based on the evaluation of modeling performed for the Action Alternatives, it is expected that the No Action/No Project Alternative would not result in significant water supply effects on American River water rights holders, SWP customers, or CVP Settlement and Exchange contractors. Some minor and infrequent reduction of CVP water service contractor delivery allocations may occur. Use of water by PCWA in accordance with its water rights in its place of use has a priority to the CVP's rights at Folsom Reservoir to the extent that such CVP rights are used for export.	American River water rights holders, SWP customers, CVP Settlement and Exchange Contractors: Less than significant. CVP Water Service Contractors: Potentially significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
WATER SUPPLY AND HYDROLOGY (Continued)		
Water supply availability to American River water rights holders.		
<u>Action Alternatives Compared to the Existing Condition.</u> Water supply deliveries/availability to American River water rights holders would be the same as under the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project (Future).</u> Water supply deliveries/availability to American River water rights holders would be the same as under the No Action/No Project Alternative.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Water supply deliveries/availability to American River water rights holders would be the same as under the existing condition.	Less than significant.	
Delivery allocations to SWP customers.		
<u>Action Alternatives Compared to the Existing Condition.</u> Water supply delivery allocations to SWP customers would be the same as under the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project (Future).</u> Water supply delivery allocations to SWP customers would be the same as under the No Action/No Project Alternative.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Feather River Service Area customers would not experience any reduction in allocations, compared to the existing condition. Delta Service Area customers would be subject to frequent (42 out of 70 years simulated) and substantial (5 to 45 percent) allocation reductions.	Feather River Service Area: Less than significant. Delta Service Area: Significant impact.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> The delivery allocation to Delta Service Area SWP customers would remain unchanged between cumulative (future with the project) and future base (future with project diversions held at 8,500 AFA).	Delta Service Area: Less than significant.	Delta Service Area: None proposed.
Delivery allocations to CVP contractors.		
<u>Action Alternatives Compared to the Existing Condition.</u> Water supply delivery allocations to CVP Settlement and Exchange Contractors would be the same as under the existing condition. Water supply delivery allocations to CVP water service contractors would experience small and infrequent reductions in percent delivery allocations. Although reduction in allocation percent would be only 5 percent in less than at most 2 years over the 70-year simulation, any reduction would be considered significant. Use of water by PCWA in accordance with its water rights in its place of use has a priority to the CVP's rights at Folsom Reservoir to the extent that such CVP rights are used for export.	CVP Settlement and Exchange Contractors: Less than significant. CVP Water Service Contractors: Potentially significant and unavoidable.	CVP Settlement and Exchange Contractors: None proposed. CVP Water Service Contractors: None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
WATER SUPPLY AND HYDROLOGY (Section 3.4) (Continued)		
Delivery allocations to CVP contractors (continued).		
<p><u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Water supply delivery allocations to CVP Settlement and Exchange contractors would be the same as under the No Action/No Project Alternative.</p> <p>Water supply delivery allocations to CVP water service contractors would experience small and infrequent reductions in percent delivery allocations. Although reduction in allocation percent would be minor, any reduction would be considered significant. Use of water by PCWA in accordance with its water rights in its place of use has a priority to the CVP's rights at Folsom Reservoir to the extent that such CVP rights are used for export.</p>	<p>CVP Settlement and Exchange Contractors: Less than significant</p> <p>CVP Water Service Contractors: Potentially significant and unavoidable.</p>	<p>CVP Settlement and Exchange Contractors: None proposed.</p> <p>CVP Water Service Contractors: None proposed.</p>
<p><u>Cumulative Condition.</u> Water supply delivery allocations to CVP Settlement and Exchange contractors would be the same as under the existing condition.</p> <p>Water supply delivery allocations to CVP water service contractors would be reduced by 5 to 25 percent in a substantial number of years.</p>	<p>CVP Settlement and Exchange Contractors: Less than significant</p> <p>CVP Water Service Contractors: Potentially significant and unavoidable.</p>	
<p><u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> Water supply delivery allocations to CVP water service contractors would experience small and infrequent reductions in percent delivery allocations under the future condition with the project versus the future with project diversions held at current levels. Although reduction in allocation percent would be minor, any reduction would be considered significant. Use of water by PCWA in accordance with its water rights in its place of use has a priority to the CVP's rights at Folsom Reservoir to the extent that such CVP rights are used for export.</p>	<p>CVP Water Service Contractors Potentially significant and unavoidable.</p>	<p>CVP Water Service Contractors: None proposed.</p>
FISH RESOURCES AND AQUATIC HABITAT (Section 3.5)		
FACILITIES-RELATED IMPACTS		
Construction effects on aquatic resources of the North Fork American River.		
<p><u>No Action/No Project Alternative.</u> Installation and removal of the seasonal pump station would not differ in a way that would affect aquatic resources of the North Fork American River.</p>	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
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FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Construction effects on aquatic resources of the North Fork American River (continued).		
<p><u>Proposed Project.</u> In-river construction would have the potential to disturb aquatic habitat areas and fish resources not affected by existing or No Action/No Project Alternative conditions.</p> <p>Construction-related activities would involve substantially more earthwork than under existing, No Action/No Project Alternative, and Upstream Diversion Alternative conditions.</p> <p>Implementation of BMPs identified in the Water Quality section would prevent degradation of aquatic habitat in the project area.</p>	Less than significant.	<p>3.3-1: Removal of Construction Litter and Debris</p> <p>3.3-2: Construction-related Water Quality Protection Measures</p>
<p><u>Upstream Diversion Alternative.</u> With the exception of construction associated with river channel restoration and river access development, the Upstream Diversion Alternative would have the same construction-related consequences as the Proposed Project.</p> <p>Water Quality Environmental Protection and Mitigation Measures would be included.</p>	Less than significant.	<p>3.3-1: Removal of Construction Litter and Debris</p> <p>3.3-2: Construction-related Water Quality Protection Measures</p>
Fish impingement and entrainment at the point of diversion.		
<p><u>No Action/No Project Alternative.</u> Reclamation, under coordination and consultation with CDFG, would determine the method for temporary fish screening methods on a regular basis (every five years) as part of renewing their Streambed Alteration Agreement. Compliance with these terms and conditions would protect fish resources at the site.</p>	Less than significant.	None proposed.
<p><u>Action Alternatives.</u> The Action Alternatives would include installation of a CDFG-approved fish screen.</p>	Beneficial impact.	3.1-1: Prevent Fish Entrainment and Impingement at the Water Supply Intake/Point of Diversion
Alteration of habitat through creation of backwater on the North Fork American River upstream of the intake structure.		
<p><u>No Action/No Project Alternative.</u> Upstream aquatic habitat would remain unchanged compared to the existing condition. Under the existing condition, fish passage is restricted by the bypass tunnel.</p>	Less than significant.	None proposed.
<p><u>Proposed Project.</u> Aquatic habitat conditions at the project site would be greatly improved due to restoration of the river channel as compared to the existing, No Action/No Project Alternative and Upstream Diversion Alternative conditions. Backwater created during flow conditions below 6,000 cfs could alter habitat conditions somewhat, but not to the extent that native fish habitat would be adversely modified.</p>	Beneficial impact.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Alteration of habitat through creation of backwater on the North Fork American River upstream of the intake structure (continued)		
<u>Upstream Diversion Alternative.</u> Backwater created during flow conditions below 6,000 cfs would not be expected to adversely affect fish habitat as compared to the existing and No Action/No Project Alternative conditions. This alternative would not provide restoration of the river channel so the benefit of overall improved fish habitat and aquatic resource conditions would not be present as under the Proposed Project.	Less than significant.	None proposed.
Fish passage through the project area.		
<u>No Action/No Project Alternative.</u> No additional structures or other features would be developed that might alter fish passage conditions as compared to the existing condition.	Less than significant.	None proposed.
<u>Proposed Project.</u> Restoration of the river channel would improve fish passage conditions over the existing, No Action/No Project Alternative, and Upstream Diversion Alternative conditions by removal of the bypass tunnel. Gradient control for the water supply diversion would include design considerations for effective fish passage.	Beneficial impact.	None proposed.
<u>Upstream Diversion Alternative.</u> The bypass tunnel would remain open as under the existing and No Action/No Project Alternative conditions.	Less than significant.	None proposed.
Auburn Ravine salmonids.		
<u>No Action/No Project Alternative.</u> The existing diversion pattern from the North Fork American River to Auburn Ravine will not change, thereby avoiding any flow-related impacts to the Auburn Ravine aquatic ecosystem. No Action/No Project Alternative water deliveries to Lincoln WWTRF do not significantly exacerbate the potential impact relating to increases in flow in Auburn Ravine identified by the City of Lincoln (1999) WWTRF Draft EIR.	Less than significant.	3.1-2: Avoid Impacts Upon Auburn Ravine Fish, Aquatic and Terrestrial (Riparian) Resources
<u>Action Alternatives.</u> The existing diversion pattern from the North Fork American River to Auburn Ravine will not change, thereby avoiding any flow-related impacts to the Auburn Ravine aquatic ecosystem. Action Alternatives' water deliveries to Lincoln WWTRF do not significantly exacerbate the potential impact relating to increases in flow in Auburn Ravine identified by the City of Lincoln (1999) WWTRF Draft EIR.	Less than significant.	3.1-2: Avoid Impacts Upon Auburn Ravine Fish, Aquatic and Terrestrial (Riparian) Resources
Public river access parking areas.		
<u>Proposed Project.</u> Increased public use of the project area would have the potential to introduce pollutants or contaminants associated with vehicular and human activities from the parking areas and river access. Design of the parking lots, trails and roadways would incorporate appropriate drainage improvements to minimize potential for water quality impacts. Sanitation facilities (restrooms and trash containers) also would serve to minimize water quality degradation.	Less than significant.	3.3-4: Minimize Water Quality Impacts From Increased Public Access

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
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FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Cumulative Facilities-Related Impacts		
All future planned actions or projects within the river channel would be responsible for implementing water quality protection measures according to regulatory and planning agency requirements. No significant cumulative impact upon water quality affecting fish resources would be anticipated.	Less than significant.	
DIVERSION-RELATED IMPACTS		
<u>No Action/No Project Alternative Compared to Existing Condition.</u> The increased pump station diversion under the No Action/No Project Alternative would be less than evaluated for the Action Alternatives (see below). Based on the evaluation of modeling performed for the Action Alternatives, it is expected that the No Action/No Project Alternative would not result in significant effects on fish habitat or aquatic resources, nor would it result in a significant or considerable contribution to the cumulative condition.	Less than significant.	None proposed.
North and Middle forks of the American River		
<u>Action Alternatives Compared to the Existing Condition.</u> <i>Upstream of Diversion</i> - Hydrologic modeling indicates that monthly mean flows above the diversion would be essentially equivalent to the existing condition for most of the time. Under low-flow conditions, river flows would differ only slightly due to changes in MFP operations with a long-term increase compared to the existing condition. Changes in flow would not be expected to result in measurable changes in water temperature upstream of the project site relative to the existing condition. <i>Downstream of Diversion</i> - Monthly mean flows downstream of the project site would be reduced in summer months when water supply diversions are highest; however, during low-flow months, river flows would be higher than under the existing condition. Changes in water temperature would not be expected to be measurable. Additionally, restoration of the river channel provides an overall improvement of fish habitat and aquatic resource conditions not provided under the existing, No Action/No Project Alternative, or Upstream Diversion Alternative conditions.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> <i>Upstream of Diversion</i> - Average long-term monthly mean flows in the upper American River above the diversion would be essentially equivalent all months of the year, compared to the No Action/No Project Alternative. Changes in average long-term monthly mean flows would range from decreases and increases of up to 0.6 percent. The relatively minor changes in average long-term monthly mean flows would not be expected to affect fish of the upper American River. The minor changes in flow would not be expected to result in measurable changes in river water temperature.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
North and Middle forks of the American River (continued).		
<p><u>Action Alternatives Compared to No Action/No Project Alternative (Future) (Continued).</u></p> <p><i>Downstream of Diversion</i> - Average long-term monthly mean flows downstream of the project diversion would be reduced in all but one month of the year, with decreases ranging from less than one percent to 5.8 percent. These minor changes in flow would not be expected to adversely impact fish resources in the river below the site. Under the Proposed Project, river restoration would provide an overall benefit to these resources. The relatively minor changes in river flow would not be expected to result in measurable changes in water temperature.</p>	Less than significant.	None proposed.
<p><u>Cumulative Condition.</u> <i>Upstream of Diversion</i> - Lower monthly mean flows would occur during peak diversion season (April through September) with the percentage decrease ranging from 0.2 to 3.7 percent. The changes in monthly mean flows would be considered minor and would not affect fish resources, relative to the existing condition. The relatively minor changes in river flow would not be expected to result in measurable changes in water temperature.</p> <p><i>Downstream of Diversion</i> - Long-term average monthly mean flows downstream of the project diversion would be reduced in all but two months of the year, with decreases ranging from less than one percent to 10 percent. These minor changes in flow would not be expected to adversely impact fish resources in the river below the site. Under the Proposed Project, river restoration would provide an overall benefit to these resources. The relatively minor changes in river flow would not be expected to result in measurable changes in water temperature.</p>	Less than significant.	
Folsom Reservoir warmwater fisheries.		
<p><u>Action Alternatives Compared to the Existing Condition.</u> Additional diversions from the North Fork American River and associated changes in CVP operations would result in almost no difference in the long-term average end-of-month water surface elevation in Folsom Reservoir during the critical spawning and rearing period (i.e., March through September) as compared to the existing condition. Related, the long-term reduction of reservoir littoral habitat would be minor and infrequent (two percent or less) and would not reduce long-term average initial year-class strength of the warmwater fish populations. The potential for reservoir elevations to decrease by more than nine feet during the primary fish-spawning months (March through July) would not increase during any month of the spawning period when compared to the existing condition.</p>	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Folsom Reservoir warmwater fisheries (continued).		
<u>Action Alternatives Compared to No Action/No Project (Future).</u> The long-term average end-of-month water surface elevation during March through September (spawning and initial rearing period) would be the same in all months but July, when modeling indicates a reduction of up to one foot. In most months, the elevation would increase or remain essentially the same as under the No Action/No Project Alternative. Differences in reservoir elevation would potentially result in a range of increased littoral habitat by up to 1.4 percent to a decrease of up to 3.1 percent, relative to the No Action/No Project Alternative. These changes would not be of sufficient magnitude to substantially reduce long-term average initial year-class strength. The frequency of nest-dewatering events would increase only slightly (up to two more occurrences) than under the No Action/No Project Alternative.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Long-term average end-of-month water surface elevations would be reduced up to eight feet during March through September; these reductions could lead to reductions in the long-term average amount of available littoral habitat of between 5 and 31 percent. These reductions in habitat availability could lead to increased predation on young-of-the-year warmwater fish, potentially reducing the long-term initial year-class strength of the population. The increased frequency of nest-dewatering events would be significant, relative to the existing condition.	Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> A comparison of the future with the project (cumulative) versus the future with project diversions held at existing levels (8,500 AFA) indicates almost no difference in the long-term average end-of-month water surface elevation during March through September. Seasonal reductions in littoral habitat availability also would be expected to be minor and infrequent by comparison. The frequency with which potential nest-dewatering events would occur would not change significantly. The incremental contribution to the cumulative condition would therefore not be considerable.	Less than significant.	None proposed.
Folsom Reservoir's coldwater fisheries.		
<u>Action Alternatives Compared to the Existing Condition.</u> Minor changes in Folsom Reservoir end-of-month storage during some years of the April through November period would occur due to changes in CVP operations associated with increased North Fork American River diversions, as compared to the existing condition. For any given month, a less than one percent reduction in long-term average end-of-month storage would be the largest change from the existing condition. Such reductions in reservoir storage would not be expected to adversely affect the reservoir's coldwater fish because coldwater habitat would remain available within the reservoir during all months of all years; physical habitat availability is not believed to be among the primary factors limiting coldwater fish populations; and anticipated seasonal reductions in storage would not be expected to adversely affect the primary prey species utilized by coldwater fish.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
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FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Folsom Reservoir's coldwater fisheries (continued).		
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Minor reductions in Folsom Reservoir end-of-month storage would occur, relative to the No Action/No Project Alternative. The largest difference in any given month would be up to 4,000 AF, or less than one percent change. Anticipated reductions in reservoir storage would not be expected to adversely affect the reservoir's coldwater fish because coldwater habitat would remain available within the reservoir during all months of all years and anticipated seasonal reductions in storage would not be expected to adversely affect the primary prey species utilized by coldwater fish.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Decreases in long-term average reservoir storage would not be substantial compared to the existing condition. These changes would not adversely affect coldwater fisheries because coldwater habitat would remain available within the reservoir during all months of all years and anticipated seasonal reductions in storage would not be expected to affect the primary prey species utilized by coldwater fish.	Less than significant.	
Nimbus Fish Hatchery.		
<u>Action Alternatives Compared to the Existing Condition.</u> CVP operations of Folsom Reservoir and Dam associated with the Action Alternatives would have very little effect on water temperatures entering the Nimbus Fish Hatchery from Lake Natoma during the May through September critical period for hatchery operations, compared to the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> CVP operations of Folsom Reservoir and Dam associated with the Action Alternatives would have very little effect on water temperatures entering the Nimbus Fish Hatchery from Lake Natoma during the May through September critical period for hatchery operations, compared to the No Action/No Project Alternative.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> CVP operations of Folsom Reservoir and Dam associated with the cumulative condition would have very little effect on water temperatures entering the Nimbus Fish Hatchery from Lake Natoma during the May through September critical period for hatchery operations, compared to the existing condition.	Less than significant.	
Lower American River Fisheries Impacts		
Fall-run chinook salmon and steelhead in the lower American River.		
<u>Action Alternatives Compared to the Existing Condition.</u> Minimal potential differences in lower American River flows and water temperatures, relative to the existing condition, would not be expected to adversely affect fall-run chinook salmon and steelhead immigration, spawning and incubation, or juvenile rearing and emigration.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Fall-run chinook salmon and steelhead in the lower American River (continued).		
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Minimal potential differences in lower American River flows and water temperatures, relative to the No Action/No Project Alternative, would not be expected to adversely affect fall-run chinook salmon and steelhead immigration, spawning and incubation, or juvenile rearing and emigration.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Flow reductions under the cumulative condition may adversely affect long-term juvenile fall-run chinook salmon rearing habitat availability. Temperature increases during March through June represent a potentially significant impact to juvenile fall-run chinook salmon rearing. The cumulative condition also would result in periods of reduced flows (March through June) affecting juvenile steelhead rearing success. Temperature increases during March through June represent a potentially significant impact to juvenile steelhead rearing.	Juvenile fall-run chinook salmon rearing habitat availability: Potentially significant. Juvenile steelhead rearing: Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> Flows below Nimbus Dam and at Watt Avenue would be within 2 percent of the future base condition, or essentially equivalent in most months. Modeling results indicate there would be additional years in which flows below Nimbus Dam would be lower than future base conditions by more than 10 percent. Further examination of these data, however, indicates that in seven of the eight years, such differences are due to time-step functions in PROSIM; real-time operations and adjustments would result in a less substantial decrease in storage. The Action Alternatives' incremental contribution to the cumulative condition (reduced flows and increased temperatures) would therefore not be substantial.	Juvenile fall-run chinook salmon rearing habitat availability: Less than significant. Juvenile steelhead rearing habitat availability: Less than significant.	None proposed.
Splittail in the lower American River.		
<u>Action Alternatives Compared to the Existing Condition.</u> The long-term average flow at Watt Avenue during February through May would range between 0.5 to two percent less than under the existing condition. The long-term average acreage of usable riparian vegetation inundated during the February to May spawning period would not change substantially relative to the existing condition. Flow changes would have little, if any, effect on the availability of in-channel spawning habitat availability from the mouth up to River Mile (RM) 5. Long-term population trends of splittail would not be expected to be adversely affected, compared to the existing condition. No substantial change in the frequency of water temperature exceeding the reported preferred range for splittail spawning would occur, relative to the existing condition.	Less than significant.	None proposed.

Table S-5 (Continued)		
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FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Splittail in the lower American River (continued).		
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> The long-term average flow at Watt Avenue during February through May would range between 0.3 to 0.9 percent less than under the No Action/No Project Alternative. The long-term average acreage of usable riparian vegetation inundated during the February to May spawning period would not change for any month relative to the No Action/No Project Alternative. Flow changes would have little, if any, effect on the availability of in-channel spawning habitat availability from the mouth up to RM 5. Long-term population trends of splittail would not be expected to be adversely affected, compared to the No Action/No Project Alternative. No substantial change in the frequency of water temperature exceeding the reported preferred range for splittail spawning would occur, relative to the No Action/No Project Alternative.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Under the cumulative condition, the long-term average flow at Watt Avenue (February to May) would be 1.6 to 6.3 percent less than the existing condition. The estimated reduction of useable riparian habitat for splittail would be considered significant compared to the existing condition.	Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> Long-term average usable inundated riparian habitat would not change during February through May under the cumulative condition (future with an Action Alternative) compared to the future base (future with project diversions held at 8,500 AFA). Minor and infrequent decreases in the amount of habitat would occur in these months, but would not represent a significant contribution to the cumulative condition.	Less than significant.	None proposed.
American shad in the lower American River.		
<u>Action Alternatives Compared to the Existing Condition.</u> Average river flows at the American River mouth would be reduced by about one percent in May and June, relative to the existing condition. While flow reductions could potentially reduce the total number of shad attracted into the river, shad are known to spawn opportunistically where suitable conditions are found and overall production within the Sacramento River system would not be expected to be adversely affected. Modeling results also indicate that the probability of occurrence of flows required to maintain the shad sport fishery (3,000 cfs) would not differ, relative to the existing condition. Mean monthly water temperatures in May and June would be similar to the existing condition, with the exception of one year (out of 70) where temperature may be outside of the reported preferred range (60°F to 70°F).	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
American shad in the lower American River (continued).		
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Average river flows at the American River mouth would be reduced by up to 0.3 percent in May and increased by up to 0.1 percent in June, relative to the No Action/No Project Alternative. Such flow changes would be unlikely to affect the total number of shad attracted into the river, particularly because shad are known to spawn opportunistically where suitable conditions are found and overall production within the Sacramento River system would not be expected to be adversely affected. Modeling results also indicate that the probability of occurrence of flows required to maintain the shad sport fishery (3,000 cfs) would not differ, relative to the No Action/No Project Alternative. Mean monthly water temperatures in May and June would be similar to the No Action/No Project Alternative, with the exception of one year (out of 70) where temperature may be outside of the reported preferred range (60°F to 70°F).	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Average river flows at the American River mouth would be reduced by about seven percent in May and 3.4 percent in June, relative to the existing condition. Such flow changes would potentially reduce the total number of shad attracted into the river; however, because shad are known to spawn opportunistically where suitable conditions are found, overall production of shad within the Sacramento River would not be expected to be adversely affected. Modeling results also indicate that the probability of occurrence of flows required to maintain the shad sport fishery (3,000 cfs) would meet this threshold in one less year, relative to the existing condition. Mean monthly water temperatures in May and June would be similar to the existing condition, with the exception of one year (out of 70) for each month where temperature may be outside of the reported preferred range (60° to 70°).	Less than significant.	
Striped bass in the lower American River.		
<u>Action Alternatives Compared to the Existing Condition.</u> Striped bass juvenile rearing would not be affected by changes in river flows, compared to the existing condition. River flows at the mouth to maintain the striped bass sport fishery (1,500 cfs) would be met or exceeded in most years during both May and June; the strength of the striped bass fishery would not be expected to be adversely affected by infrequent increased reductions of May or June monthly mean flows that would occur relative to the existing condition. The frequency for suitable temperature for juvenile striped bass rearing in the river would remain essentially unchanged.	Less than significant.	None proposed.

Impact Issue

Impact Significance

Environmental Protection and Mitigation Measures

FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)

Striped bass in the lower American River (continued).

Action Alternatives Compared to No Action/No Project Alternative (Future). Striped bass juvenile rearing would not be affected by changes in river flows, compared to the No Action/No Project Alternative. River flows at the mouth to maintain the striped bass sport fishery (1,500 cfs) would be met or exceeded in most years during both May and June; the strength of the striped bass fishery would not be expected to be adversely affected by infrequent increased reductions of May or June monthly mean flows that would occur relative to the No Action/No Project Alternative. The frequency for suitable temperature for juvenile striped bass rearing in the river would be within the reported preferred range for juvenile rearing two less years in both May and June below Nimbus Dam and one additional year in May at the mouth, relative to the No Action/No Project Alternative.

Less than significant.

None proposed.

Cumulative Condition. Striped bass juvenile rearing would not be affected by changes in river flows, compared to the existing condition. River flows at the mouth to maintain the striped bass sport fishery (1,500 cfs) would be met or exceeded in most years during both May and June; the strength of the striped bass fishery would not be expected to be adversely affected by infrequent increased reductions of May or June monthly mean flows that would occur relative to the existing condition. The frequency for suitable temperature for juvenile striped bass rearing in the river would be within the reported preferred range for juvenile rearing one less year in May but one additional year in June below Nimbus Dam and two additional years in May at the mouth, relative to the existing condition.

Less than significant.

Shasta and Trinity reservoir warmwater fisheries.

Action Alternatives Compared to the Existing Condition. *Shasta Reservoir* - End-of-month elevation at Shasta Reservoir would be essentially equivalent to or greater than the existing condition in most months (March through September); reductions in average end-of-month elevation of one foot or more could occur four percent of the time during the March through September period. Differences in the long-term average amount of littoral habitat potentially available to fish for spawning and rearing would be infrequent and not of sufficient magnitude to substantially reduce long-term average initial year-class strength of warmwater fish populations. The potential for nest-dewatering events would not change substantially, relative to the existing condition.

Trinity Reservoir - End-of-month elevation at Trinity Reservoir would be essentially equivalent to or greater than the existing condition in most months (March through September). Differences in the long-term average amount of littoral habitat potentially available to fish for spawning and rearing would be infrequent and not of sufficient magnitude to substantially reduce long-term average initial year-class strength of warmwater fish populations. The potential for nest-dewatering events would not change substantially, relative to the existing condition.

Shasta Reservoir:
Less than significant.

None proposed.

Trinity Reservoir:
Less than significant.

None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Shasta and Trinity reservoir warmwater fisheries (continued).		
<p><u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> <i>Shasta Reservoir</i> - End-of-month elevation at Shasta Reservoir would be essentially unchanged or greater than No the Action/No Project Alternative in most months (March through September); reductions in average end-of-month elevation of one foot or more could occur 11 percent of the time during the March through September period. Differences in the long-term average amount of littoral habitat potentially available to fish for spawning and rearing would be infrequent and not of sufficient magnitude to substantially reduce long-term average initial year-class strength of warmwater fish populations. The potential for nest-dewatering events would not change substantially, relative to the No Action/No Project Alternative.</p> <p><i>Trinity Reservoir</i> - End-of-month elevation at Trinity Reservoir would be essentially equivalent to or greater than the existing condition in most months (March through September). Reductions in the long-term average amount of littoral habitat potentially available to fish for spawning and rearing would be infrequent and not of sufficient magnitude to substantially reduce long-term average initial year-class strength of warmwater fish populations. The potential for nest-dewatering events would not change substantially, relative to the No Action/No Project Alternative.</p>	<p>Shasta Reservoir: Less than significant.</p> <p>Trinity Reservoir: Less than significant.</p>	None proposed.
<p><u>Cumulative Condition.</u> <i>Shasta Reservoir</i> - In over half of the years simulated, water surface elevation would be reduced by more than one foot compared to the existing condition (March through September). The long-term average availability of littoral habitat would be reduced to an extent that would potentially affect long-term average initial year-class strength of the fish populations. The relative frequency of potential nest dewatering events under cumulative compared to the existing condition would not change substantially.</p> <p><i>Trinity Reservoir</i> - The long-term average end-of-month water surface elevation would not change substantially from the existing condition (March through September). Reductions in the long-term average availability of littoral habitat would not be reduced to an extent that would be anticipated to affect long-term average initial year-class strength of warmwater fish populations. Modeling results indicate that the potential for nest dewatering events would be less under the cumulative condition compared to the existing condition.</p>	<p>Shasta Reservoir: Potentially significant.</p> <p>Nest dewatering: Less than significant.</p> <p>Trinity Reservoir: Less than significant.</p>	
<p><u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u></p> <p><i>Shasta Reservoir</i> - The end-of-month water surface elevation in Shasta Reservoir would be essentially equivalent under future with project (cumulative condition) and future base (future conditions with project diversions held at 8,500 AFA) in most months of the analysis. Minor and infrequent reductions in the availability of littoral habitat would not result in reductions of the long-term average initial year-class strength of warmwater fish populations. These results indicate that the Action Alternatives' contribution to cumulative conditions would not be significant.</p>	<p>Shasta Reservoir: Less than significant.</p>	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Shasta and Trinity reservoir coldwater fisheries.		
<p><u>Action Alternatives Compared to the Existing Condition.</u> <i>Shasta Reservoir</i> - End-of-month storage would be essentially equivalent to the existing condition for most months (April through November); the largest individual storage reduction for any given month during the April through November period would be only 4.6 percent, with reductions of greater than 3 percent occurring less than approximately 1.5 percent of the time. Such reductions in reservoir storage would not be expected to adversely affect the reservoir's coldwater fish because: (1) coldwater habitat would remain available within the reservoir during all months of all years; (2) physical habitat availability is not believed to be among the primary factors limiting coldwater fish populations; and (3) anticipated seasonal reductions in storage would not be expected to adversely affect the primary prey species utilized by coldwater fish.</p> <p><i>Trinity Reservoir</i> - End-of-month storage would be essentially unchanged compared to the existing condition in most months (April through November); reductions in storage would be less than 1.4 percent for any individual month of the period evaluated. Such reductions in reservoir storage would not be expected to adversely affect the reservoir's coldwater fish because: (1) coldwater habitat would remain available within the reservoir during all months of all years; (2) physical habitat availability is not believed to be among the primary factors limiting coldwater fish populations; and (3) anticipated seasonal reductions in storage would not be expected to adversely affect the primary prey species utilized by coldwater fish.</p>	<p>Shasta Reservoir: Less than significant.</p> <p>Trinity Reservoir: Less than significant.</p>	<p>None proposed.</p> <p>None proposed.</p>
<p><u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> <i>Shasta Reservoir</i> - End-of-month storage would be essentially equivalent to or greater than the No Action/No Project Alternative for most months (April through November); the largest individual storage reduction for any given month during the April through November period would be only 3 percent and would occur infrequently. Such reductions in reservoir storage would not be expected to adversely affect the reservoir's coldwater fish because coldwater habitat would remain available within the reservoir during all months of all years and anticipated seasonal reductions in storage would not be expected to adversely affect the primary prey species utilized by coldwater fish.</p> <p><i>Trinity Reservoir</i> - End-of-month storage would be essentially unchanged or decrease only slightly (0.1 percent) compared to the No Action/No Project Alternative in most months (April through November). These reductions in reservoir storage would not be expected to adversely affect the reservoir's coldwater fish because coldwater habitat would remain available within the reservoir during all months of all years and anticipated seasonal reductions in storage would not be expected to adversely affect the primary prey species utilized by coldwater fish.</p>	<p>Shasta Reservoir: Less than significant.</p> <p>Trinity Reservoir: Less than significant.</p>	<p>None proposed.</p>

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Shasta and Trinity reservoir coldwater fisheries (continued).		
<p><u>Cumulative Condition.</u> <i>Shasta Reservoir</i> - End-of-month storage (April through November) would be reduced by 10 percent or more up to 26 percent of the time simulated under the cumulative condition compared to the existing condition. Such reductions in reservoir storage would not be expected to adversely affect the reservoir's coldwater fish because coldwater habitat would remain available within the reservoir during all months of all years and anticipated seasonal reductions in storage would not be expected to adversely affect the primary prey species utilized by coldwater fish.</p> <p><i>Trinity Reservoir</i> – End-of-month storage would be essentially unchanged or decrease by no more than about five percent compared to the existing condition in most months (April through November). These reductions in reservoir storage would not be expected to adversely affect the reservoir's coldwater fish because coldwater habitat would remain available within the reservoir during all months of all years and anticipated seasonal reductions in storage would not be expected to adversely affect the primary prey species utilized by coldwater fish.</p>	<p>Shasta Reservoir: Less than significant.</p> <p>Trinity Reservoir: Less than significant.</p>	
Sacramento River Fisheries Impacts		
Upper Sacramento River.		
<p><u>Action Alternatives Compared to the Existing Condition.</u> Monthly mean flows below Keswick Dam in the upper Sacramento River would be essentially equivalent to the existing condition in most months. Modeling results indicate that monthly mean flows below Keswick Dam would not be reduced below the NMFS Biological Opinion (1993, as revised in 1995) 3,250 cfs threshold for the protection of winter-run chinook salmon rearing and downstream passage in any month of the October through March period.</p> <p>Long-term average temperatures for the upper Sacramento River (Keswick Dam, Bend Bridge) would not change from the existing condition in any month of the year; in most months, the monthly mean temperatures would be essentially equivalent to or less than the existing condition. There would be only two additional months when water temperatures could exceed 56°F or 60°F at either Keswick Dam or Bend Bridge, relative to the existing condition. There would not be any substantial decrease in annual early-lifestage survival of fall-run, late fall-run, winter-run, or spring-run chinook salmon in any individual year relative to the existing condition.</p>	<p>Flow and temperature-related impacts: Less than significant.</p>	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Upper Sacramento River (continued).		
<p><u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Monthly mean flows below Keswick Dam in the upper Sacramento River would be essentially equivalent to No Action/No Project Alternative in most months. Modeling results indicate that monthly mean flows below Keswick Dam would not be reduced below the NMFS Biological Opinion 3,250 cfs threshold for the protection of winter-run chinook salmon rearing and downstream passage in any month of the October through March period.</p> <p>Long-term average temperatures for the upper Sacramento River (Keswick Dam, Bend Bridge) would not change by more than 0.1°F compared to the No Action/No Project Alternative in any month of the year. In most months, the monthly mean temperatures would be essentially equivalent to or less than the No Action/No Project Alternative. There would be fewer months when water temperatures could exceed 56°F at Keswick Dam or 60°F at Bend Bridge, relative to the No Action/No Project Alternative. There would not be any substantial decrease in annual early-lifestage survival of fall-run, late fall-run, winter-run, or spring-run chinook salmon in any individual year relative to the No Action/No Project Alternative.</p>	<p>Flow and temperature-related impacts:</p> <p>Less than significant.</p>	None proposed.
<p><u>Cumulative Condition.</u> Monthly mean flows below Keswick Dam in the upper Sacramento River would be reduced by up to 9.4 percent relative to the existing condition. Modeling results indicate that monthly mean flows below Keswick Dam would not be reduced below the NMFS Biological Opinion 3,250 cfs threshold for the protection of winter-run chinook salmon rearing and downstream passage in any month of the October through March period.</p> <p>Long-term average temperatures for the upper Sacramento River (Keswick Dam, Bend Bridge) would change substantially from the existing condition with several additional months when temperatures exceed temperature thresholds identified in the NMFS Biological Opinion for winter-run chinook salmon, relative to the existing condition. Additionally, there would be a decrease in the long-term average early-lifestage survival of more than 10 percent in 11 years for fall-run and four years for winter-run chinook salmon; no decreases of more than 10 percent would be expected for late-fall-run and increases in survival would be anticipated for spring-run, relative to the existing condition.</p>	<p>Flow-related impacts:</p> <p>Less than significant.</p> <p>Temperature-related impacts:</p> <p>Potentially significant.</p>	

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Upper Sacramento River (continued).		
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> The future with the project (cumulative condition) would not result in more than a 0.1°F change in the long-term average temperature in the upper Sacramento River for any month of the year relative to the future base condition (future with project diversion held at 8,500 AFA). Additionally, there would be only one additional month when temperature would potentially exceed the NMFS Biological Opinion temperature thresholds. There would not be substantial decreases in annual early-lifestage survival of fall-run, late-fall-run, winter-run, or spring-run chinook salmon in any individual year under the cumulative condition compared to the future base. These results indicate that the Action Alternatives' incremental contribution to the cumulative conditions would not be considerable.	Temperature-related impacts: Less than significant.	None proposed.
Lower Sacramento River.		
<u>Action Alternatives Compared to the Existing Condition.</u> The long-term average flow at Freeport in the lower Sacramento River would be within 0.2 percent of the long-term average under the existing condition in all months of the year. Flow reductions of more than five percent would occur in only one month relative to the existing condition. Based on these flow results, physical habitat availability and immigration of adult or emigration of juvenile anadromous fish would not be adversely affected relative to the existing condition. Long-term average temperatures at Freeport would not change more than 0.1°F during any month of the year; monthly mean temperatures would be essentially equivalent to the existing condition for all but one month of the simulation. The number of years in which water temperature would exceed water temperatures indices would be similar to the existing condition during the March through November period. Monthly mean water temperatures would be essentially equivalent to the No Action/No Project Alternative for all but one month (827 out of 828).	Flow-related impacts: Less than significant. Temperature-related impacts: Less than significant.	None proposed. None proposed.
<u>Action Alternatives Compared to No Action/No Project (Future).</u> The long-term average flow at Freeport in the lower Sacramento River would be within 0.3 percent of the long-term average under the No Action/No Project Alternative in all months of the year. Flow reductions of more than five percent would occur in only four months relative to the No Action/No Project Alternative. Based on these flow results, physical habitat availability and immigration of adult or emigration of juvenile anadromous fish would not be adversely affected relative to the existing condition.	Flow-related impacts: Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Lower Sacramento River (continued).		
<u>Action Alternatives Compared to No Action/No Project (Future) (continued).</u> Long-term average water temperatures at Freeport would not change more than 0.1°F during any month of the year; monthly mean temperatures would be essentially equivalent to the existing condition for all but one month of the simulation. The number of years in which water temperature would exceed water temperature indices would be similar to the No Action/No Project Alternative during the March through November period, with only four additional occurrences above the water temperature indices. Monthly mean water temperatures would be essentially equivalent to the No Action/No Project Alternative for most months (825 out of 828).	Temperature-related impacts: Less than significant.	None proposed.
<u>Cumulative Condition.</u> The long-term average flow at Freeport would be within five percent of the long-term average under the existing condition in all months of the year. Based on these flow results, physical habitat availability and immigration of adult or emigration of juvenile anadromous fish would not be adversely affected relative to the existing condition. Long-term average water temperature at Freeport would not change more than 0.3°F relative to the existing condition. The number of years that temperatures exceed the temperature thresholds would increase during March through November and would be considered potentially significant.	Flow-related impacts: Less than significant. Temperature-related impacts: Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> Long-term average temperatures at Freeport would not change by more than 0.1°F under the cumulative condition (future with the project) compared to the future base (future with project diversions held at 8,500 AFA). The number of years that temperatures exceed temperature thresholds would be only slightly increased during the March through November period but would not be considered significant. Based on these results, the incremental contribution of the Action Alternatives would not be considered significant.	Temperature-related impacts: Less than significant.	None proposed.
Delta fish populations.		
<u>Action Alternatives Compared to the Existing Condition.</u> Reductions in the long-term average Delta outflow of up to 0.3 percent for any given month could occur relative to the existing condition. Delta outflow reduction of more than three percent occurred during only seven individual months of the February to June period, relative to the existing condition. There would be no shift in the long-term average position of X2, relative to the existing condition; the maximum upstream shift for any individual month of any individual year would be less than 1 kilometer (km) (0.2 km). All model simulations assumed compliance with SWRCB X2 and Delta maximum export ratio requirements.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Delta fish populations (continued).		
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Reductions in the long-term average Delta outflow of up to 0.3 percent for any given month could occur relative to No Action/No Project Alternative. Delta outflow reduction of more than three percent occurred during only eight individual months of the February to June period, relative to the No Action/No Project Alternative. There would be no shift in the long-term average position of X2 for 11 months of the year, relative to the No Action/No Project Alternative; in November, the shift would be up to 0.1 km shift. The maximum upstream shift for any individual month of any individual year would be no more than 1.1 km. All model simulations assumed compliance with SWRCB X2 and Delta maximum export ratio requirements.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> The cumulative condition would potentially result in decreased Delta outflow and shifts in the position of X2 that would be considered potentially significant, compared to the existing condition.	Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> Reductions in the long-term average Delta outflow of up to 0.3 percent could occur under the cumulative condition relative to the future base condition. Shifts in the long-term average position of X2 would not be by more than 0.1 km. Based on these results, the Action Alternatives' incremental contribution to the cumulative condition would not be considerable.	Less than significant.	None proposed.
Oroville Reservoir warmwater fisheries.		
<u>Action Alternatives Compared to the Existing Condition and No Action/No Project Alternative.</u> The Action Alternatives would not result in substantial changes in elevation at Oroville Reservoir relative to the existing condition or to the No Action/No Project Alternative. Any small changes that may occur would be considered to represent less-than-significant impacts upon warmwater fish.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> The long-term average end-of-month water surface elevation in Oroville Reservoir would be reduced under the cumulative condition. The largest decrease in water surface elevation during the March through September season would be up to 75 feet for any individual year for the 70-year period included in the analysis. Modeling results indicate that the frequency of nest-dewatering would increase substantially in Oroville Reservoir under the cumulative condition, relative to the existing condition.	Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> No substantial changes in reservoir elevation would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives' incremental contribution to the cumulative condition would not be considerable.	Less-than-significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
FISH RESOURCES AND AQUATIC HABITAT (Section 3.5) (Continued)		
Oroville Reservoir coldwater fisheries.		
<u>Action Alternatives Compared to the Existing Condition and the No Action/No Project Alternative.</u> The Action Alternatives would not result in substantial changes in storage, elevation, or temperature at Oroville Reservoir relative to the existing condition or to the No Action/No Project Alternative. Any small changes that may occur would be considered to represent less-than-significant impacts upon coldwater fish.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> The long-term average end-of-month storage elevation in Oroville Reservoir would be slightly reduced under the cumulative condition. The largest decrease in long-term average end-of-month storage would be approximately 8.3 percent during the month of September. The relatively small reductions in reservoir storage would not be expected to adversely affect the reservoir's coldwater fisheries because coldwater habitat would remain available within the reservoir during all months of all years and anticipated seasonal reductions in storage would not be expected to adversely affect the primary prey species utilized by coldwater fish.	Less than significant.	None proposed.
Lower Feather River fisheries.		
<u>Action Alternatives Compared to the Existing Condition and the No Action/No Project Alternative.</u> The Action Alternatives would not result in substantial changes in flow or temperature in the Feather River relative to the existing condition or the No Action/No Project Alternative condition. Any small changes that may occur would be considered to represent less-than-significant impacts upon Feather River fish.	Flow and temperature-related impacts: Less than significant.	None proposed.
<u>Cumulative Condition.</u> The long-term average flow below Oroville Dam would be reduced by up to 14.1 percent over the 70-year period of record. These reductions would be considered potentially significant. Long-term average water temperatures would not be reduced by more than 2.2°F. There would be only four months out of 828 that would show increases greater than 0.3°F. These small increases in water temperatures would be expected to have a less-than-significant impact on fish resources of the Feather River.	Flow-related Impacts: Potentially significant. Temperature-related Impacts: Less than significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> The Action Alternatives would not result in an incremental contribution to water temperature impacts for the Feather River under the cumulative condition.	Flow-related impacts: Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
TERRESTRIAL RESOURCES (SECTION 3.6)		
FACILITIES-RELATED IMPACTS		
Construction -related disturbance of special-status species.		
<u>No Action/No Project Alternative.</u> The changed timing of seasonal pump station installation and removal would not be expected to result in disturbance of terrestrial resources that differs from the existing condition. The site is already highly disturbed from previous activities associated with Auburn Dam and annual seasonal pump station construction.	Less than significant.	None proposed.
<u>Action Alternatives.</u> Construction-related increases in noise and human activity would not be expected to disturb endangered or threatened bird species that potentially use the area (i.e., bald eagle, little willow flycatcher, and American peregrine falcon) because they are rarely seen and are not known to nest in the area. Individuals foraging in the area could easily use other similar or higher quality habitats in the canyon. Surveys conducted for the project indicate that red-legged frogs do not utilize the ponds in the project area. Special-status species (i.e., California horned lizard, spotted bat, greater mastiff bat, and yellow-legged frogs) may be temporarily or permanently displaced by earthwork and human activity in the area. Removal of vegetation potentially would result in disturbance of individuals. The Upstream Diversion Alternative would not result in the overall benefits associated with the restored river channel, but may lessen the long-term disturbance of individual species, relative to the existing condition or No Action/No Project Alternative, because annual operation and maintenance of the year-round facility would not involve the earthwork associated with installation/removal of the seasonal facilities.	Endangered/threatened species: Less than significant. Construction impact upon special-status species: Less than significant.	3.2-1: Establish Buffer Zone to Avoid Disturbance of and Prevent the Permanent Loss of Riparian, Wetland, and Pond Vegetation and Associated Habitat 3.2-2: Minimize Impacts Upon State and Federal Special-Status Species in the Project Area 3.2-3: Measures for Entrapped, Injured or Dead Special-Status Animal Species 3.2-4: Restoration of Permanent Riparian Wetland and Pond Vegetation/Habitat Loss
Construction-related disturbance or removal of riparian and wetland habitat.		
<u>No Action/No Project Alternative.</u> The changed timing of seasonal pump station installation and removal would not be expected to result in disturbance of riparian or wetland resources that differs from the existing condition. Installation and removal of the seasonal pump station facilities, including placement of the intake pipeline and dredging of the sump pond would continue to take place according to a CDFG Streambed Alteration Agreement with terms and conditions to protect habitats and individual special-status species.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
TERRESTRIAL RESOURCES (SECTION 3.6) (Continued)		
Construction-related disturbance or removal of riparian and wetland habitat (continued).		
<p><u>Proposed Project.</u> Temporary and permanent loss of riparian and wetland habitats has the potential to effect special-status and other species.</p> <p><i>Foothill Yellow-Legged Frog</i> - Disturbance or loss of riparian or wetland habitat could result in harm or death of foothill yellow-legged frogs that may be present in the study area.</p> <p><i>Western Toad and Chorus Frog</i> - Loss of wetland habitat would potentially result in the harm or death of these species.</p> <p><i>Wetland Areas</i> - Placement of excavated materials on the eastern keyway bench would result in the fill of acres of potential wetland. Restoration of the river channel would be expected to result in new areas of riparian and wetland areas that would be anticipated to replace the lost habitat values.</p>	Less than significant.	<p>3.2-4: Restoration of Permanent Riparian, Wetland and Pond Vegetation/Habitat Loss/</p> <p>3.2-2: Minimize impacts upon state and federal special-status species in the Project Area.</p>
<p><u>Upstream Diversion Alternative.</u> Impacts for riparian and wetland habitat and associated species generally would be as described for the Proposed Project. However, the Upstream Diversion Alternative would result in the loss of up to 0.11 acre of potential wetland habitat. Because the river would not be restored, other means of replacing or restoring wetland areas would be required.</p>	Less than significant.	<p>3.2-2: Minimize impacts upon state and federal special-status species in the Project Area.</p> <p>3.2-4: Restoration of Permanent Riparian, Wetland and Pond Vegetation/Habitat Loss.</p>
DIVERSION-RELATED IMPACTS		
<p><u>No Action/No Project Alternative Compared to Existing Condition.</u> The increased pump station diversion under the No Action/No Project Alternative would be less than evaluated for the Action Alternatives (see below). Based on the evaluation of modeling performed for the Action Alternatives, it is expected that the No Action/No Project Alternative would not result in significant reductions of river flows or reservoir elevations such that terrestrial resources would be adversely affected. Additionally, the No Action/No Project Alternative would not be expected to result in considerable contributions to cumulative impacts.</p>	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
TERRESTRIAL RESOURCES (SECTION 3.6) (Continued)		
Upper American River riparian vegetation, habitat and associated species.		
<u>Action Alternatives Compared to the Existing Condition.</u> Changes in upper American River flows would not be of sufficient frequency or magnitude to adversely affect riparian vegetation, relative to the existing condition. No adverse riparian habitat or associated species impacts would be anticipated.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Changes in upper American River flows would not be of sufficient frequency or magnitude to adversely affect riparian vegetation, relative to the No Action/No Project Alternative. No adverse riparian habitat or associated species impacts would be anticipated.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Changes in upper American River flows would not be of sufficient frequency or magnitude to adversely affect riparian vegetation, relative to the existing condition. No adverse riparian habitat or associated species impacts would be anticipated.	Less than significant.	
Lower American River riparian vegetation, habitat and associated species.		
<u>Action Alternatives Compared to the Existing Condition.</u> Changes in lower American River flows would result in slightly more frequent reduction of flows below the indices for cottonwood growth and terrace inundation. These reduced flows would result in a slight increase in the number of consecutive occurrences where flows would be reduced below the indices, relative to the existing condition. Overall, the flow reductions are not considered to be of sufficient magnitude and/or frequency to have long-term effects on the population and growth of cottonwoods/riparian vegetation as to affect the habitat value for special-status species or other associated species, relative to the existing condition/.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Changes in lower American River flows would result in slightly more frequent reduction of flows below the indices for cottonwood vegetation, relative to the No Action/No Project Alternative. However, these reductions are not considered to be of substantial magnitude and/or to occur with enough frequency to have long-term population growth and maintenance of cottonwoods/riparian vegetation or to affect the habitat value for special-status species or other associated species relative to the No Action/No Project Alternative.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
TERRESTRIAL RESOURCES (SECTION 3.6) (Continued)		
Lower American River riparian vegetation, habitat and associated species (continued).		
<u>Cumulative Condition.</u> Changes in lower American River flows would result in more frequent reduction of flows below the indices for cottonwood growth and terrace inundation. Flows would be below the maintenance of radial growth index up to approximately 6.4 percent more often and below the some growth index up to 6.4 percent more often than under the existing condition. Reduced flows in the cumulative condition would result in six more occurrences of two or more consecutive months below the maintenance of radial growth index and in five additional occurrences of two or more consecutive months below the some growth index; however, these occurrences would not be in critical growing months (April through July). Overall, the cumulative condition flow reductions are not considered to be of sufficient magnitude and/or frequency to have long-term effects on the population and growth of cottonwoods/riparian vegetation or to affect the habitat value for special-status or other associated species, relative to the existing condition.	Less than significant.	
Lower American River special-status species dependent upon backwater pond/marsh habitats.		
<u>Action Alternatives Compared to the Existing Condition.</u> Modeling results indicate that backwater pond/marsh habitat recharge would not be significantly altered, relative to the existing condition; therefore, no adverse effects to these species would be expected to occur, relative to the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Modeling results indicate that backwater pond/marsh habitat recharge would not be significantly altered, relative to the No Action/No Project Alternative; therefore, no adverse effects to these species would be expected to occur, relative to the No Action/No Project Alternative.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Modeling results indicate that backwater pond/marsh habitat recharge would not be significantly altered, relative to the existing condition; therefore, no adverse effects to these species would be expected to occur, relative to the existing condition.	Less than significant.	
Lower American River elderberry shrubs/VELB.		
<u>Action Alternatives Compared to the Existing Condition.</u> Backwater ponds/habitats would not be expected to be significantly altered, relative to the existing condition; therefore, elderberry shrub and critical habitat for VELB would not be expected to be adversely affected.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Backwater ponds/habitats would not be expected to be significantly altered, relative to the No Action/No Project Alternative; therefore, elderberry shrub and critical habitat for VELB would not be expected to be adversely affected.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
TERRESTRIAL RESOURCES (SECTION 3.6) (Continued)		
Lower American River elderberry shrubs/VELB (continued).		
<u>Cumulative Condition.</u> Backwater ponds/habitats would not be expected to be significantly altered, relative to the existing condition; therefore, elderberry shrub and critical habitat for VELB would not be expected to be adversely affected.	Less than significant.	
Folsom, Shasta, Trinity, and Oroville reservoir vegetation.		
<u>Action Alternatives Compared to the Existing Condition.</u> Long-term average end-of-month water elevations for Folsom, Trinity, Shasta, and Oroville reservoirs would be essentially equivalent to the existing condition (March through September). Slight reductions of monthly mean elevations would not be expected to affect habitat values at these reservoirs.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Long-term average end-of-month water elevations for Folsom, Trinity, Shasta, and Oroville reservoirs would be essentially equivalent to the No Action/No Project Alternative. Slight reductions of monthly mean elevations would not be expected to affect habitat values at these reservoirs.	Less than significant.	None proposed.
<p><u>Cumulative Condition.</u> Long-term average end-of-month water elevations for Folsom, Shasta and Trinity, reservoirs would be reduced relative to the existing condition with reductions ranging from 2 to 11 feet during growing season months (March through September). The anticipated reductions would not affect areas of high and consistent habitat value which would remain available for species associated with the reservoir.</p> <p><u>Oroville Reservoir -</u> Compared to the existing condition, the cumulative condition would result in substantially lower long-term average end-of-month elevation for the March through September vegetation growing period over the 70-year period of record. Long-term average end-of-month elevation reductions for Oroville Reservoir would range from six to 18 feet. During individual years, reductions of up to 76 feet in end-of-month elevation would occur.</p>	<p>Folsom, Shasta and Trinity Reservoirs: Less than significant.</p> <p>Oroville Reservoir: Potentially significant.</p>	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> No substantial changes in Oroville Reservoir elevation would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives' contribution to the cumulative condition would not be considerable.	Oroville Reservoir: Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
TERRESTRIAL RESOURCES (SECTION 3.6) (Continued)		
Upper Sacramento River riparian vegetation.		
<u>Action Alternatives Compared to the Existing Condition.</u> Long-term average flows of the upper Sacramento River during the growing season (March through October) would be essentially equivalent or slightly increased relative to the existing condition. Decreases ranging from one to 18 cfs would occur; however, during the critical growing season months, river flows would potentially increase. The greatest long-term average flow reduction would be only one percent. Changes in flows of the upper Sacramento River would not be expected to adversely affect riparian vegetation and associated habitat values or species, relative to the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Long-term average flows of the upper Sacramento River during the growing season (March through October) would be essentially equivalent to the No Action/No Project Alternative. Decreases ranging from one to 27 cfs would occur, however, during the critical growing season months, river flows would potentially increase. The greatest long-term average flow reduction would be only two percent. Changes in flows of the upper Sacramento River would not be expected to adversely affect riparian vegetation and associated habitat values or species, relative to the No Action/No Project Alternative.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Long-term average flows during the March through October growing season would be reduced, relative to the existing condition with decreases of 80 to 825 cfs. These decreases would be small, considering the monthly mean flow range of over 5,000 to over 13,000 cfs. The anticipated flow reduction would not be of sufficient magnitude and/or frequency to significantly alter riparian vegetation and related species, relative to the existing condition.	Less than significant.	
Lower Sacramento River riparian vegetation.		
<u>Action Alternatives Compared to the Existing Condition.</u> Long-term average flow reduction in the lower Sacramento River would range from 17 to 24 cfs during the growing season (March through October), relative to the existing condition. The greatest long-term average flow reduction would be only two percent. Changes in flows of the lower Sacramento River would not be expected to adversely affect riparian vegetation and associated habitat values or species, relative to the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> The greatest long-term average flow reduction would be only three percent, relative to the No Action/No Project Alternative. Long-term average flow decreases would range from 10 to 47 cfs during the growing season, relative to the No Action/No Project Alternative. Changes in flows of the lower Sacramento River would not be expected to adversely affect riparian vegetation and associated habitat values or species, relative to the No Action/No Project Alternative.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
TERRESTRIAL RESOURCES (SECTION 3.6) (Continued)		
Lower Sacramento River riparian vegetation (continued).		
<u>Cumulative Condition.</u> The greatest long-term average flow reduction would be less than five percent, relative to the existing condition. Long-term average flow reductions would range from 399 to 828 cfs during most months, with increases ranging from 36 to 466 cfs in early spring and mid-summer months. The frequency and magnitude of the flow reductions would be small considering the monthly mean flow range of over 11,000 to over 33,000 cfs during the growing season months. Existing riparian habitats of the lower Sacramento River would not be expected to be adversely affected under cumulative conditions.	Less than significant.	
Delta riparian vegetation and special-status species.		
<u>Action Alternatives Compared to the Existing Condition.</u> The long-term average position of X2 would not shift relative to the existing condition; the maximum shift in any individual month would be 0.7 km (less than the 1 km threshold). Lower Sacramento River flows and inflow to the Delta would not be reduced such that habitats or species would be adversely affected.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> The long-term average position of X2 would not shift relative to the No Action/No Project Alternative; the maximum shift in any individual month would be 0.8 km. Lower Sacramento River flows and inflow to the Delta would not be reduced such that habitats or species would be adversely affected.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Long-term flow reductions of the lower Sacramento River would not be expected to alter the riparian habitat of the Delta. Shifts in the long-term average position of X2 would be considered minor and would not adversely affect vegetation and associated habitat or species.	Less than significant.	
Feather River vegetation and special-status species.		
<u>Action Alternatives Compared to the Existing Condition and the No Action/No Project Alternative (Future).</u> The Action Alternatives would not result in substantial changes in flow in the Feather River relative to the existing condition or to the No Action/No Project Alternative. Any small change in flow that may occur would be considered to represent a less-than-significant impact.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Compared to the existing condition, the cumulative condition would result in changes in flow in the Feather River during the March to October growing season ranging from a reduction of 5.7 percent in March to an increase of 36.4 percent in August. Because the decreases in flows would occur when flows are already very low in the March to October period, such reductions may adversely affect riparian vegetation on the Feather River.	Potentially significant.	

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
TERRESTRIAL RESOURCES (SECTION 3.6) (Continued)		
Feather River vegetation and special-status species (continued).		
<i>Action Alternatives' Incremental Contribution to the Cumulative Condition.</i> No substantial changes in reservoir elevation would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives' incremental contribution to the cumulative condition would not be considerable.	Less than significant.	None proposed.
WATER QUALITY (Section 3.7)		
FACILITIES-RELATED IMPACTS		
Construction-related increase in sediment and turbidity in the North Fork American River affecting downstream water quality.		
<p><u>No Action/No Project Alternative.</u> Installation and removal of the seasonal pump station facilities would not be expected to increase sediment and turbidity levels in the river compared to the existing condition. However, due to the extended operation season, the facilities would be more vulnerable to damage from high river flows, potentially requiring occasional rebuilding and reinstallation of facilities more frequently than under the existing condition.</p> <p>Reclamation would continue to comply with the Corps, RWQCB, and CDFG regulatory permit terms and conditions. As needed, additional consultations and/or coordination would take place in response to high flow events requiring dredging or other work outside of the installation/removal permit terms and conditions.</p>	Less than significant.	None proposed.
<u>Action Alternatives.</u> Compared to existing and No Action/No Project Alternative conditions, construction of the pump station and diversion/intake and associated facilities (pipelines, roadways) at the project site would involve substantial earthwork and some in-river activity. Under the Proposed Project, the construction activity also includes development of the public river access features. The Action Alternatives would increase sediment and turbidity in the North Fork American River, which potentially would affect the quality of water available for downstream beneficial uses.	Less than significant.	<p>3.3-1: Removal of Construction Litter and Debris</p> <p>3.3-2: Construction-related Water Quality Protection Measures</p>
Pump station operation and maintenance-related increase in sediment and turbidity in the North Fork American River affecting downstream water quality.		
<p><u>No Action/No Project Alternative.</u> Operation and maintenance of the seasonal pump station facilities would not be expected to increase sediment and turbidity levels in the river compared to the existing condition.</p> <p>Reclamation would continue to comply with regulatory agency permit terms and conditions.</p>	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
WATER QUALITY (Section 3.7) (Continued)		
Pump station operation and maintenance-related increase in sediment and turbidity in the North Fork American River affecting downstream water quality.		
<u>Action Alternatives.</u> Operation and maintenance of the year-round pump station facilities would be expected to result in less frequent in-river (dredging/removal of accumulated sediment at diversion/intake) and ground surface disturbances (road maintenance/rehabilitation) compared to existing and No Action/No Project Alternative conditions.	Less than significant/beneficial.	3.3-2: Project Operation and Maintenance Water Quality Protection
<u>Proposed Project.</u> The river access/parking could accommodate up to 53 vehicles at one time on a peak recreation day leading to potential increased contribution of vehicular and human-related pollutants to local surface water runoff.	Less than significant.	3.3-4: Minimize Water Quality Impacts From Increased Public Access
Cumulative Facilities-Related Impacts		
Implementation of the selected alternative would require permit compliance and incorporation of BMPs to minimize water quality impacts to levels considered less than significant. It is expected that regulatory agencies would require the same level of river water quality protection of other planned/proposed projects in the study area thereby reducing the potential for cumulative water quality degradation.	Less than significant.	No additional measures proposed.
DIVERSION-RELATED IMPACTS		
Increased North Fork American River diversions and changes in CVP operations could result in reduced river flows and reservoir elevations potentially increasing contaminant concentrations, affecting water quality available downstream and at other locations in the CVP and SWP systems.		
<u>No Action/No Project Alternative Compared to Existing Condition.</u> The increased pump station diversion under the No Action/No Project Alternative would be less than evaluated for the Action Alternatives (see below). Based on the evaluation of modeling performed for the Action Alternatives, it is expected that the No Action/No Project Alternative would not result in significant increases in contaminant concentrations downstream of the project site or in other CVP system water bodies.	Less than significant.	None proposed.
<u>Action Alternatives Compared to Existing Condition.</u> Reduced contribution of high quality flows from the North Fork American River would potentially affect water quality in downstream water bodies by reducing dilution flows. Compared to the existing condition, hydrologic modeling indicates the potential for long-term reductions in river flows and reservoir storage under the Action Alternatives as follows: Folsom Reservoir storage - less than 1 percent Lower American River flows - less than 2 percent Shasta and Trinity Reservoir storage - less than 0.1 percent Upper and lower Sacramento River flows - less than 0.1 percent Oroville Reservoir storage and Feather River flows - less than 1 percent	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
WATER QUALITY (Section 3.7) (Continued)		
DIVERSION-RELATED IMPACTS (Continued)		
<u>Action Alternatives Compared to Existing Condition (continued).</u> Potential increases in constituent concentrations associated with decreased dilution capacity would not be expected to cause state or federal drinking water quality criteria or standards to be exceeded within the study area.		
<u>Action Alternatives Compared to No Action/No Project (Future).</u> Compared to the future No Action/No Project Alternative conditions, hydrologic modeling indicates the potential for long-term average reductions in river flows and reservoir storage under the Action Alternatives as follows: Folsom Reservoir storage - less than 1 percent Lower American River flows - less than 2 percent Shasta and Trinity Reservoir storage - less than 0.1 percent Upper and lower Sacramento River flows - less than 0.1 percent Oroville Reservoir storage and Feather River flows - less than 1 percent Potential increases in constituent concentrations associated with decreased dilution capacity would not be expected to cause state or federal drinking water quality criteria or standards to be exceeded within the study area.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Compared to the existing condition, cumulative CVP system conditions would have substantially reduced reservoir storage levels and river flows. Hydrologic modeling comparisons to the existing condition indicate the potential long-term average reductions in river flows and reservoir storage under the cumulative condition as follows: Folsom Reservoir storage - up to 11 percent Lower American River flows - up to 15 percent Shasta Reservoir storage - up to 7 percent Trinity Reservoir storage - up to 5 percent Upper Sacramento River flows - up to 10 percent Lower Sacramento River flows - up to 5 percent Oroville Reservoir - up to 8 percent Feather River - up to 14 percent The greatest flow reductions would occur in months when river flow is already low - September, October, and November. Potential increases in constituent concentrations associated with decreased dilution capacity could contribute to exceedance of state or federal drinking water quality criteria or standards within the study area that would not occur in the existing condition.	Potentially significant.	

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
WATER QUALITY (Section 3.7) (Continued)		
DIVERSION-RELATED IMPACTS (Continued)		
<p><u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> Hydrologic modeling results comparing the future with a year-round pump station and increased diversions to the future without the pump station or increased diversions (held at base diversion of 8,500 AFA) indicate the Action Alternatives would result in the following long-term average reductions of river flows and reservoir storage:</p> <p>Folsom Reservoir storage - less than 1.2 percent Lower American River flows - less than 2 percent Shasta Reservoir storage - less than 0.1 percent Trinity Reservoir storage - less than 0.2 percent Upper Sacramento River flows - less than 0.2 percent Lower Sacramento River flows - less than 0.3 percent Oroville Reservoir and Feather River - less than 1 percent</p>	Less than significant.	None proposed.
Impacts to Delta water quality.		
<p><u>No Action/No Project Alternative Compared to Existing Condition.</u> The increased pump station diversion under the No Action/No Project Alternative would be less than evaluated for the Action Alternatives (see below). Based on the evaluation of modeling performed for the Action Alternatives, it is expected that the No Action/No Project Alternative would not impact Delta water quality.</p>	Less than significant.	None proposed.
<p><u>Action Alternatives Compared to Existing Condition.</u> Delta outflow reductions of more than three percent occur in only 7 out of 350 months simulated, relative to the existing condition. No shift in the long-term average position of X2 was indicated by the modeling results, relative to the existing condition. PROSIM assumptions include conformance with X2 requirements of the SWRCB Interim Water Quality Control Plan and the Interior's Final Administrative Proposal for the Management of 3406(b)(2) water; therefore, the maximum export ratio would not be exceeded by implementation of the Action Alternatives.</p>	Less than significant.	None proposed.
<p><u>Action Alternatives Compared to No Action/No Project (Future).</u> Delta outflow reductions of more than three percent occur in only 8 out of 840 months simulated (approximately 1 percent), relative to the No Action/No Project Alternative. In one month, an upstream shift of 0.1 km in the long-term average position of X2 was indicated by the modeling results, relative to the No Action/No Project Alternative. PROSIM assumptions include conformance with X2 requirements of the SWRCB Interim Water Quality Control Plan and the Interior's Final Administrative Proposal for the Management of 3406(b)(2) water; therefore, the maximum export ratio would not be exceeded by implementation of the Action Alternatives.</p>	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
WATER QUALITY (Section 3.7) (Continued)		
Impacts to Delta water quality (continued).		
<u>Cumulative Condition.</u> The greatest long-term average Delta outflow reduction under the cumulative condition, compared to the existing condition would be 8.3 percent. The long-term average position of X2 would move upstream by less than one kilometer, compared to the existing condition.	Potentially significant	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> Hydrologic modeling results comparing the future with a year-round pump station and increased diversions to the future without the pump station or increased diversions (held at base diversion of 8,500 AFA) indicate the Action Alternatives would reduce the long-term average Delta outflow by only up to 0.3 percent and contribute to a shift of the long-term average X2 position of not more than 0.1 km, relative to the future condition with diversions at existing levels.	Less than significant.	None proposed.
RECREATION (Section 3.8)		
FACILITIES-RELATED IMPACTS		
Public recreation trail access during construction.		
<u>No Action/No Project Alternative.</u> Activities associated with installation and removal and operation of the seasonal pump station would not change in a way that would affect project area recreation trail uses as compared to the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives.</u> Reclamation's construction contractor would limit recreation trail access during construction to protect public safety and to facilitate project construction. To the extent feasible, recreation access will be maintained adjacent to and through the site, depending upon the nature of the construction activity. Special trail events would be coordinated among CDPR event coordinators, event organizers, and Reclamation's construction contractor such that the permitted annual events that use the project area would not be adversely affected.	Less than significant.	3.4-1: Maintain Public Recreation Trail Access During Construction 3.4-2: Avoid Recreation Trail Closures That Affect the Western States Endurance Run, Tevis Cup Western States Trail Ride or the American River – 50-Mile Endurance Run
Auburn-to-Cool Trail		
<u>No Action/No Project Alternative.</u> Activities associated with installation and removal and operation of the seasonal pump station would not affect recreation use of the Auburn-to-Cool Trail.	Less than significant.	None proposed.
<u>Proposed Project.</u> Closure of the Auburn Dam construction bypass tunnel and restoration of the North Fork American River through the project area would result in bifurcation of the Auburn-to-Cool Trail.	Significant and unavoidable.	3.4-3: Auburn-to-Cool Trail (bridge/trail feasibility studies and contribution of funding)

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
RECREATION (Section 3.8) (Continued)		
Auburn-to-Cool Trail (continued)		
Upstream Diversion Alternative. The Upstream Diversion Alternative would not result in bifurcation of the Auburn-to-Cool Trail as the bypass tunnel would remain open, and flows would not be restored to the dewatered river channel.	Less than significant.	None proposed.
Project area trails and recreation uses and plans.		
<u>No Action/No Project Alternative.</u> Construction and operation activities associated with the continued use of the seasonal pump station would not introduce any additional public use in the project area relative to the existing condition. However, the continued unauthorized use of the river and presence of the bypass tunnel at the project site would remain unresolved public safety issues.	Potentially significant and unavoidable.	No feasible measures available under this alternative.
<u>Proposed Project.</u> The Proposed Project includes new trail ways and other design features, including designated parking for disabled river users, to minimize potential for trail user conflict associated with increased public use and introduction of vehicles. The Proposed Project is consistent with applicable recreation plans in the project and regional study areas. Closure of the bypass tunnel and development of a navigable waterway as part of the river restoration component of the Proposed Project would result in beneficial conditions as compared to the existing condition, No Action/No Project Alternative, and Upstream Diversion Alternative.	Less than significant/beneficial	3.4-4: Minimize Trail User Conflicts Due to Increased Public Access 3.4.-6: Provide Disabled Access Parking Area
<u>Upstream Diversion Alternative.</u> The bypass tunnel would remain open, posing a public safety threat to unauthorized boaters traveling through the site. Safety measures included in the design would reduce but not eliminate the safety hazard posed by the bypass tunnel.	Potentially significant and unavoidable.	No additional feasible measures available under this alternative.
Middle Fork/North Fork confluence recreation.		
<u>Proposed Project.</u> Restoration of the river channel at the project site would result in increased boat launching and passage at the Middle/North fork confluence, upstream of the project area. Currently, during peak recreation season (spring and summer) parking at the confluence is insufficient to meet the demand. Future comprehensive planning efforts to be undertaken by Reclamation and CDPR would include planning and development of projects to improve parking and other recreation use issues within the Auburn SRA.	Significant.	CDPR and Reclamation to address in update to Auburn SRA comprehensive plan.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
RECREATION (Section 3.8) (Continued)		
DIVERSION-RELATED IMPACTS		
<u>No Action/No Project Alternative Compared to Existing Condition.</u> The increased pump station diversion under the No Action/No Project Alternative would be less than evaluated for the Action Alternatives (see below). Based on the evaluation of modeling performed for the Action Alternatives, it is expected that the No Action/No Project Alternative would not result in significant reductions of river flows or reservoir elevations such that regional recreation resources would be adversely affected.	Less than significant.	None proposed.
Middle Fork American River recreation.		
<u>Action Alternatives Compared to the Existing Condition.</u> PCWA would continue to release water from Ralston Afterbay to support recreational and commercial whitewater rafting in the Middle Fork American River. To meet water supply and environmental instream flow requirements, the duration of daily releases would be reduced by a maximum of up to eight hours (two percent change) during one or more months of the June to October recreation season.	Potentially significant and unavoidable.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Because water supply diversions would increase under the No Action/No Project Alternative compared to the existing condition, the difference in the duration of daily releases from Ralston Afterbay to support recreational and commercial whitewater rafting in the Middle Fork American River between the Action Alternatives and No Action/No Project Alternative would be less than the eight-hour reduction (two percent change) determined in the comparison to the existing condition.	Potentially significant and unavoidable.	None proposed.
Lower American River recreation.		
<u>Action Alternatives Compared to the Existing Condition.</u> Changes in CVP operations associated with the Action Alternatives would result in up to a 3.6 percent decrease in the frequency of lower American River flows in the optimal river recreation flow range, and a decrease of 0.8 percent of the frequency of river flows in the minimum to maximum recreation flow range, compared to the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project (Future).</u> Lower American River mean monthly flows would be essentially the same as under the No Action/No Project Alternative (less than one percent reduction in the total number of months that fall within the minimum/maximum range or the optimum range). Water-based and enhanced recreation opportunities would not be adversely affected.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
RECREATION (Section 3.8) (Continued)		
Lower American River recreation (continued).		
<u>Cumulative Condition.</u> Long-term average flows in the lower American River would be up to seven percent lower than under the existing condition resulting in a five percent decrease in the number of months when flows would be within the optimal range and a three percent decrease of months when flows would be in the minimum to maximum recreation flow range.	Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> Flows would fall below the optimum recreation flow range approximately one percent more often than the existing condition and below the minimum to maximum recreation flow range by less than one percent.	Less than significant.	None proposed.
Folsom Reservoir boating.		
<u>Action Alternatives Compared to the Existing Condition.</u> Hydrologic modeling indicates that Folsom Reservoir elevations would drop below the 420-foot elevation (all boat ramps operable) in four additional months (out of 490; less than one percent decrease in availability) compared to the existing condition. Throughout the boating season, the availability of at least one low-water boat ramp on each side of the reservoir would be approximately the same as under the existing condition. The availability of marina wet slips would be the same as the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project (Future).</u> Reservoir elevations would be below the minimum recreation surface elevation for boating and marinas in slightly more years than the No Action/No Project Alternative. However, throughout the boating season, the availability of at least one low-water boat ramp on each side of the reservoir would be approximately the same as under the No Action/No Project Alternative.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Under cumulative conditions, the usability of all boat ramps and marina wet slips would decrease by up to 7.6 percent; there would be no net change in the availability of at least one useable boat ramp on each side of the reservoir.	Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> Boat ramp and marina wet slip usability would decrease in only one month (out of 70) compared to the existing condition.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
RECREATION (Section 3.8) (Continued)		
Folsom Reservoir swimming.		
<u>Action Alternatives Compared to the Existing Condition.</u> Lowered reservoir elevations during the peak swimming season (May through September) would occur infrequently compared to the existing condition. Overall, there would be two fewer months (out of 350) when reservoir elevations would be below the optimum and useable beach ranges.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> There would be no net effect on the frequency of reservoir elevations meeting the useable threshold for swimming opportunities at beaches during the recreation season; a less than one percent decrease in the frequency of elevations meeting the optimum level would occur, compared to the existing condition.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> The frequency in which the water levels would be within the usable beach range would be reduced by seven percent; and by four percent for the optimum range.	Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> Folsom Reservoir elevations would be essentially the same for the future with the project (cumulative condition) and future base condition (future with the project diversions held at existing levels); indicating the Action Alternatives would not result in a considerable contribution to the cumulative condition.	Less than significant.	None proposed.
Shasta Reservoir recreation.		
<u>Action Alternatives Compared to the Existing Condition.</u> The total number of years when all boat ramps are usable and the total number of years when at least one public ramp is available on each of the reservoir arms would not change, compared to the existing condition. Shoreline and camping facilities also would not be affected, compared to the existing condition.	Less than significant.	
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> The long-term mean end-of-month water surface elevations during the recreation season would be essentially the same as the No Action/No Project Alternative.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Water level reductions below critical recreation thresholds would diminish recreation opportunities at Shasta Reservoir more frequently than under the existing condition.	Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> Shasta Reservoir elevations would be unchanged for future with the project (cumulative condition) relative to the future base condition (future with the project diversions held at existing levels) for boat ramp and camping thresholds; elevations would be reduced below the shoreline threshold less than one percent of the time (one year for one month) indicating the Action Alternatives would not result in a considerable contribution to the cumulative condition.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
RECREATION (Section 3.8) (Continued)		
Trinity Reservoir recreation.		
<u>Action Alternatives Compared to the Existing Condition.</u> There would be no change in the frequency of reservoir levels required to allow for boat launching from the three major public boat ramps during the recreation season.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> There would be no change in the frequency of reservoir elevations required for boating and other water-related recreation, compared to the No Action/No Project Alternative.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Water level reductions below critical recreation thresholds would diminish recreation opportunities at two of the Trinity Reservoir arm boat ramps more frequently than under the existing condition. Overall, reservoir elevation reductions would be infrequent and would not adversely affect boating and other water-related recreation compared to the existing condition.	Less than significant.	
Upper Sacramento River recreation.		
<u>Action Alternatives Compared to the Existing Condition.</u> Hydrologic modeling indicates that the probability of upper Sacramento River flows meeting the 5,000 cfs minimum recreation flow would be unchanged, compared to the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Upper Sacramento River flows would be essentially the same as the No Action/No Project Alternative during the recreation season.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Hydrologic modeling indicates that the probability of upper Sacramento River flows meeting the 5,000 cfs minimum recreation flow would be lowered infrequently, compared to the existing condition.	Less than significant.	
Lower Sacramento River recreation.		
<u>Action Alternatives Compared to the Existing Condition.</u> Hydrologic modeling indicates that the probability of lower Sacramento River flows exceeding 10,000 cfs is identical in all months of the recreation season. In August, when existing condition flows are below 10,000 cfs, the Action Alternatives would result in slightly higher river flows.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Lower Sacramento River flows would be essentially the same as the No Action/No Project Alternative during the recreation season.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> The frequency of lower Sacramento River flows meeting or exceeding the 5,000 cfs minimum recreation flow would be essentially the same as the existing condition during the recreation season.	Less than significant.	

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
RECREATION (Section 3.8) (Continued)		
Delta recreation.		
<u>Action Alternatives Compared to the Existing Condition.</u> Hydrologic modeling indicates that Delta inflows would be reduced by about only 0.1 percent during the recreation season, compared to the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Flows into the Delta would be essentially the same as the No Action/No Project Alternative during the recreation season.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Sacramento River inflows would be decreased at most by approximately 850 cfs during the recreation season; because this amount is substantially less than the 13,200 to 19,200 cfs range of tidal influence on Delta inflows, it would not affect recreation opportunities available under the existing condition.	Less than significant.	
Consistency with the American River Parkway Plan.		
<u>Action Alternatives Compared to the Existing Condition.</u> The evaluation of lower American River flows indicates that the Action Alternatives would not result in recreation season flows below the D-1400 standard more often than the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> The evaluation of lower American River flows indicates that Action Alternatives would not result in recreation season flows below the D-1400 standard more often than under the No Action/No Project Alternative.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> The evaluation of lower American River flows indicates that cumulative conditions would not result in recreation season flows below the D-1400 standard more often than under the existing condition.	Less than significant.	
Consistency with state and federal Wild and Scenic River Act designations.		
<u>Action Alternatives Compared to the Existing Condition.</u> The evaluation of river flows indicates that the Action Alternatives would not diminish the recreation values and would be consistent with the state and federal recreational river designations.	Less than significant.	None proposed.
<u>Action Alternatives Compared No Action/No Project Alternative (Future).</u> The evaluation of river flows indicates that the Action Alternatives would not diminish the recreation values and would be consistent with the state and federal recreational river designations.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> The evaluation of river flows indicates that the cumulative condition would potentially diminish the recreation values of designated river segments; however the Action Alternatives would not result in a considerable contribution to this effect and would not contribute to inconsistencies with the state and federal recreational river designations.	Less than significant.	

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
RECREATION (Section 3.8) (Continued)		
Oroville Reservoir recreation.		
<u>Action Alternatives Compared to the Existing Condition and the No Action/No Project Alternative (Future).</u> The Action Alternatives would not result in substantial changes in elevation at Oroville Reservoir relative to the existing condition or to the No Action/No Project Alternative (future) condition.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Compared to the existing condition, the cumulative condition would result in substantially lower long-term average end-of-month elevation for most months of the year over the 70-year period of record, with up to 18 feet reduction in long-term average end-of-month elevation in September, potentially resulting in significant cumulative impacts upon recreation.	Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> No substantial changes in reservoir elevation would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives' incremental contribution to the cumulative condition would not be considerable.	Less than significant.	None proposed.
Feather River recreation.		
<u>Action Alternatives Compared to the Existing Condition and the No Action/No Project Alternative (Future).</u> The Action Alternatives would not result in substantial changes in Feather River flows relative to the existing condition or to the No Action/No Project Alternative (future) condition.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Compared to the existing condition, the Feather River would experience substantial changes in flow in most months of the year for the 70-year period of record. Changes in long-term average monthly mean flow would range from a decrease of 14.1 percent in November to an increase of 36.4 percent in August. Given the uncertainty associated with the potential effects that these flow reductions may have on recreation activities in the Feather River, impacts would represent a potentially significant impact.	Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> No substantial changes in river flows would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives' incremental contribution to the cumulative condition would not be considerable.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
VISUAL RESOURCES (Section 3.9)		
FACILITIES-RELATED IMPACTS		
Construction-related effects on the visual character and views of the study area from sensitive receptors' viewpoints.		
<u>No Action/No Project Alternative.</u> Installation and removal of the seasonal pump station would involve few vehicles (six heavy construction vehicles) and up to 15 construction workers at the site daily over the course of several weeks (installation lasts four to six weeks, removal, two weeks) and would be virtually the same as under the existing condition with regard to visual impacts in the study area.	Less than significant.	None proposed.
<p><u>Action Alternatives.</u> Construction activity would introduce up to 54 pieces of heavy construction equipment and 50 workers during peak activity at the project site and at Oregon Bar (parking area) for a period of up to 22 months. Improvements to trail from turnaround to Oregon Bar would be performed manually, no construction equipment would be introduced to that area.</p> <p><u>Residential Areas Along Western Canyon Ridgetop</u> - Although the visual character of the project site and Oregon Bar area would be changed as compared to the existing condition and No Action/No Project Alternative for the duration of the construction period, views of the few sensitive receptor locations that view the site would be limited to portions of the access roadways and related construction vehicles and would not result in a substantial visual impact. More scenic views of the canyon hillsides would not be obscured.</p> <p><u>Western States Trail.</u> A limited portion of the trail would have intermittent views of the construction staging area and access road. Because of the limited number of sensitive receptors and temporary nature of the construction activities, no substantial visual character impact would be expected.</p>	Less than significant.	None proposed.
<u>Upstream Diversion Alternative.</u> With the exception of the activities associated with Oregon Bar, visual impacts to residents and recreationists would be as described for the Proposed Project (above). Up to 24 pieces of heavy equipment and 50 construction workers would be at the site during peak activity.	Less than significant.	None proposed.
Operations and maintenance-related effects on the visual character and views of the study area from sensitive receptors' viewpoints.		
<u>No Action/No Project Alternative.</u> The primary visual change under the No Action/No Project Alternative compared to the existing condition would be the extended operational period leaving the seasonal pump station and associated facilities in place for up to eight months rather than four months. The facilities are visible only from the Auburn-to-Cool Trail Cofferdam Viewpoint, therefore affecting a limited number of potentially sensitive receptors for a limited duration of travel along the trail. This would not result in a substantial change in the visual character of the project site.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
VISUAL RESOURCES (Section 3.9) (Continued)		
Operations and maintenance-related effects on the visual character and views of the study area from sensitive receptors' viewpoints (continued).		
<p><u>Action Alternatives.</u> Restoration of the river channel would result in a potentially beneficial change from existing and No Action/No Project Alternative conditions in the local visual character for recreationists on the Western States Trail. Limited, intermittent views from ridgetop residential areas also would be improved. The Auburn-to-Cool Trail through the project site would be bifurcated; however, recreation use of the site and river passage through the site would experience more natural-looking scenery.</p> <p>Parking-related changes at the Auburn Dam Batch Plant plateau and increased public use of the area would result in a change in the type and level of activity visible from homes along the southwestern ridge of the canyon. The "rustic" improvements proposed for the parking area/river access use would change certain elements of the viewshed; however, because the batch plant is currently highly disturbed and littered with Auburn Dam-related remains, the improvements to the site would not degrade the view. Patches of ruderal vegetation may become covered by the parking lot. Minimal vegetation would be removed for the trail or turnaround. Overall, these uses would be considered consistent with the land use and recreational plans and character of the area.</p>	Less than significant/potentially beneficial.	None proposed.
<p><u>Upstream Diversion Alternative.</u> The pump station would be partially visible from a limited number of residential viewpoints along the northwestern ridge. Because the enclosure would be painted a neutral color to blend with the surrounding landscape, it would not create a visual impairment at the project site.</p>	Less than significant.	None proposed.
Cumulative Facilities-Related Impacts		
No substantial changes to the visual character of the canyon would be expected to occur with implementation of the Proposed Project; Foresthill Bridge modifications would provide improvement.	Less than significant.	
DIVERSION-RELATED IMPACTS		
<p><u>No Action/No Project Alternative Compared to Existing Condition.</u> The increased pump station diversion under the No Action/No Project Alternative would be less than evaluated for the Action Alternatives (see below). Based on the evaluation of modeling performed for the Action Alternatives, it is expected that the No Action/No Project Alternative would not result in significant reductions of river flows or reservoir elevations such that visual resources would be adversely affected.</p>	Less than significant.	None proposed.
Visual character of the upper American River.		
<p><u>All Conditions.</u> Hydrologic modeling of the upper American River indicates that visual resources would not be affected by changes in MFP operations.</p>	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
VISUAL RESOURCES (Section 3.9) (Continued)		
Visual character of Folsom Reservoir.		
<u>Action Alternatives Compared to Existing Condition.</u> Hydrologic modeling indicates that reductions in surface water elevation under the Action Alternatives compared to the existing condition would be 10 feet or less.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Hydrologic modeling indicates that in one month (February) over the 70-year simulation, reservoir elevation under the Action Alternatives would drop by more than 10 feet when compared to the No Action/No Project Alternative. However, because February is not a critical recreation month, this change in elevation would have a limited visual effect.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Hydrologic modeling indicates that under the cumulative condition, Folsom Reservoir elevations would drop below 10 feet approximately one percent more frequently than under the existing condition. These reductions would not be expected to substantially affect the visual character, relative to the existing condition.	Less than significant.	
Visual character of the lower American River.		
<u>Action Alternatives Compared to Existing Condition.</u> Hydrologic modeling indicates that minimal reductions in river flows would occur under the Action Alternatives compared to the existing condition. These changes would not affect the visual character or views of the lower American River.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Hydrologic modeling indicates that minimal reductions in river flows would occur under the Action Alternatives compared to the No Action/No Project Alternative. The simulated flows would not alter the visual character or views of the river.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Reduced lower American River flows under cumulative conditions would not adversely affect the riparian vegetation of the viewshed, compared to the existing condition.	Less than significant.	
Visual character of Trinity and Shasta reservoirs.		
<u>Action Alternatives Compared to Existing Condition.</u> Hydrologic modeling indicates that reductions in surface water elevation under the Action Alternatives compared to the existing condition would be 10 feet or less at both Trinity and Shasta reservoirs. These changes would not affect the visual character or views of Trinity or Shasta reservoirs.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Hydrologic modeling indicates that reductions in surface water elevation under the Action Alternatives compared to the No Action/No Project Alternative would be 10 feet or less at both Trinity and Shasta reservoirs. These changes would not affect the visual character or views of Trinity or Shasta reservoirs.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
VISUAL RESOURCES (Section 3.9) (Continued)		
Visual character of Trinity and Shasta reservoirs (continued).		
<u>Cumulative Condition.</u> Hydrologic modeling indicates that under the cumulative condition, Shasta and Trinity reservoir elevations would drop below 10 feet more frequently than under the existing condition. These changes would not affect the visual character or views of Trinity or Shasta reservoirs.	Less than significant.	
Visual character of the Sacramento River and Delta.		
<u>Action Alternatives Compared to Existing Condition.</u> Hydrologic modeling indicates that minimal reductions in upper and lower Sacramento River flows would occur under the Action Alternatives compared to the existing condition. These changes would not affect the visual character or views of the Sacramento River or Delta.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Hydrologic modeling indicates that minimal reductions in upper and lower Sacramento River flows would occur under the Action Alternatives compared to the No Action/No Project Alternative. These changes would not affect the visual character or views of the Sacramento River or Delta.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Reductions of Sacramento River flows, compared to the existing condition, would not be expected to impact the riparian vegetation element of the viewshed; therefore, visual quality of the river would not be adversely altered.	Less than significant.	
Visual character of Oroville Reservoir.		
<u>Action Alternatives Compared to the Existing Condition and No Action/No Project Alternative (Future).</u> The Action Alternatives would not result in substantial changes in elevation at Oroville Reservoir relative to the existing condition or to the No Action/No Project Alternative (future) that would affect visual resources. Any small changes that may occur would be considered to represent less-than-significant impacts upon visual resources of Oroville Reservoir.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Compared to the existing condition, the cumulative condition would result in substantially lower long-term average end-of-month elevation for most months of the year. Long-term end-of-month elevation reductions for Oroville Reservoir would range from six to 18 feet, and, in individual years, reductions of up to 76 feet in end-of-month elevation would occur. Such reductions in reservoir elevation would expose large areas of bare soil around the reservoir and may affect vegetation growth resulting in potentially significant visual impacts.	Potentially significant.	

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
VISUAL RESOURCES (Section 3.9) (Continued)		
Visual character of Oroville Reservoir (continued).		
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> No substantial changes in reservoir elevation would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives' incremental contribution to the cumulative condition would not be considerable.	Less than significant.	None proposed.
Visual character of the Feather River.		
<u>Action Alternatives Compared to the Existing Condition and No Action/No Project Alternative (Future).</u> The Action Alternatives would not result in substantial changes in flow in the Feather River relative to the existing condition or to the No Action/No Project Alternative (future) that would affect visual resources. Any small changes that may occur would be considered to represent less-than-significant impacts upon visual resources along the lower Feather River.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Compared to the existing condition, the cumulative condition would result in changes in flow during the March to October growing season ranging from a reduction of 5.7 percent in March to an increase of 36.4 percent increase in August. Because the decreases in flows would occur when flows are already low in the March to October period, such reductions may adversely affect riparian vegetation on the Feather River, and consequently, the visual character of the river.	Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> No substantial changes in river flows would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives' incremental contribution to the cumulative condition would not be considerable.	Less than significant.	None proposed.
CULTURAL RESOURCES (Section 3.10)		
FACILITIES-RELATED IMPACTS		
Disturbance of cultural resources in the project area.		
<u>No Action/No Project Alternative.</u> Continued installation and removal of the seasonal pump station facilities would occur in areas already disturbed by Auburn Dam-related construction and by previous seasonal pump station construction; no previously undisturbed lands would be graded or excavated. The potential to encounter previously undisturbed cultural resources would be similar to the existing condition.	Less than significant.	3.6-1: Stop Construction Activities if Cultural Resources or Human Remains are Uncovered

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
CULTURAL RESOURCES (Section 3.10) (Continued)		
Disturbance of cultural resources in the project area (continued).		
<u>Action Alternatives.</u> Field inspection of the anticipated construction areas for the Proposed Project and Upstream Diversion Alternative confirmed that these lands all have been previously disturbed and that no known cultural resources exist in those areas. Although the Action Alternatives, particularly the Proposed Project, which includes the river channel restoration, involve extensive excavation and blasting activities, it is considered highly unlikely that buried cultural resources would be discovered.	Less than significant.	3.6-1: Stop Construction Activities if Cultural Resources or Human Remains are Uncovered
<u>Proposed Project - Public River Access.</u> Compared to existing, No Action/No Project Alternative, and Upstream Diversion Alternative conditions, the Proposed Project would result in increased public use of the Auburn Dam area for recreation. Because the APE contains no previously recorded cultural resources or historic properties and the site has been greatly altered, there is little likelihood that increased public use of the area would result in the discovery of buried cultural resources.	Less than significant.	3.6-1: Stop Construction Activities if Cultural Resources or Human Remains are Uncovered
Cumulative Facilities-Related Impacts		
The potential for facilities-related cultural resources impacts is considered to be site-specific. The alternatives would not be expected to result in any disturbance of cultural resources in the study area, and would therefore not result in a considerable contribution to cumulative impacts upon cultural resources. Additionally, project-specific protection measures to be implemented in the event unknown resources are discovered would reduce the potential effect.	Less than significant.	No additional protective measures proposed.
DIVERSION-RELATED IMPACTS		
<u>No Action/No Project Alternative Compared to Existing Condition.</u> The increased pump station diversion under the No Action/No Project Alternative would be less than evaluated for the Action Alternatives (see below). Based on the evaluation of modeling performed for the Action Alternatives, it is expected that the No Action/No Project Alternative would not result in changes in river flows or reservoir elevations for water bodies in the study area that would contribute to a significant effect upon cultural resources.	Less than significant.	None proposed.
Flows of the upper American River.		
<u>Action Alternatives Compared to Existing Condition.</u> Hydrologic modeling of the upper American River indicates that river flows under the Action Alternatives, would not fall below existing minimum flows and would not result in increased exposure of buried cultural resources compared to the existing condition. Additionally, due to the highly disturbed nature of the project area, it is unlikely that cultural resources remain in the study area.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
CULTURAL RESOURCES (Section 3.10) (Continued)		
Flows of the upper American River (continued).		
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Under future conditions, the Action Alternatives would result in lower monthly mean flows relative to the No Action/No Project Alternative but would not drop below minimum flow levels during any month. The changes in flow would not result in increased exposure of buried cultural resources compared to No Action/No Project Alternative conditions. Additionally, due to the highly disturbed nature of the project area, it is unlikely that cultural resources remain in the study area.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> The cumulative condition flows would not be expected to drop below existing minimum flows and would, therefore, not result in increased exposure of buried cultural resources. Additionally, due to the highly disturbed nature of the project area, it is unlikely that cultural resources remain in the study area.	Less than significant.	
Water surface elevation at Folsom Reservoir.		
<u>Action Alternatives Compared to the Existing Condition.</u> Hydrologic modeling of Folsom Reservoir indicates that reservoir elevations under the Action Alternatives, would not rise above maximum elevations or fall below minimum levels as compared to the existing condition and would not result in increased exposure of cultural resources relative to the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Under future conditions, the Action Alternatives would not result in a higher maximum elevation compared to the No Action/No Project Alternative. Lower monthly mean end-of-month water surface elevations would potentially occur in some winter months, however, these elevations would not be below the minimum reservoir elevation and would not result in increased exposure of cultural resources relative to the No Action/No Project Alternative.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> The cumulative condition reservoir elevations would not rise above maximum reservoir elevations but would potentially fall below the minimum end-of-month elevation by up to three feet in two months (out of the 70-year simulation/840 months). Due to the limited frequency and magnitude of the reduced reservoir elevation, cumulative conditions would not be expected to result in increased exposure of cultural resources relative to the existing condition.	Less than significant.	
Flows of the lower American River.		
<u>Action Alternatives Compared to the Existing Condition.</u> Hydrologic modeling of the lower American River indicates that the Action Alternatives would result in maximum monthly mean river flows that would be virtually identical to those simulated for the existing condition.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
CULTURAL RESOURCES (Section 3.10) (Continued)		
Flows of the lower American River (continued).		
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Under future conditions, the Action Alternatives would result in an increase of less than three percent in maximum monthly mean river flows during late-summer, fall and winter months, compared to the No Action/No Project Alternative. Because these months are not typical peak river flow months, the changes simulated would not result in damage to cultural resources that would not usually be submerged or affected by river flow fluctuations.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Under the cumulative condition, maximum monthly mean flows in the lower American River would be essentially the same or slightly lower than the existing condition; the changes simulated would not result in damage to cultural resources that would not usually be submerged or affected by river flow fluctuations.	Less than significant.	
Water surface elevation at Shasta Reservoir		
<u>Action Alternatives Compared to the Existing Condition.</u> Hydrologic modeling of Shasta Reservoir indicates that the Action Alternatives would result in slightly lower winter and spring end-of-month elevations and slightly higher summer end-of-month elevations when compared to the existing condition. These anticipated differences in reservoir elevation would not result in elevation fluctuations outside of the existing minimum and maximum fluctuation range.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> The modeling results indicate that future Shasta Reservoir levels under the Action Alternatives would not result in a higher maximum elevation but potentially would be slightly lower (ranging from one to five feet) than No Action/No Project Alternative minimum end-of-month levels.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> The cumulative condition reservoir elevations would not rise above maximum reservoir elevations but would regularly fall below the minimum end-of-month elevation within the range of 8 to 45 feet. Due to the frequency and magnitude of the reduced reservoir elevation, cumulative conditions would be considered potentially significant and would increase the potential for increased exposure of cultural resources relative to the existing condition.	Potentially significant.	

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
CULTURAL RESOURCES (Section 3.10) (Continued)		
Water surface elevation at Shasta Reservoir (continued).		
<p><u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> The hydrologic evaluation of the Action Alternatives' incremental contribution to the cumulative condition indicates that reductions from one to six feet below the minimum reservoir end-of-month elevations may occur. The timing, frequency, and magnitude of these end-of-month elevation reductions result in a potentially significant impact; therefore, CVP operations associated with implementation of an Action Alternative would result in a considerable contribution to the cumulative condition.</p> <p>Reclamation has initiated consultation and preparation of a Programmatic Agreement with SHPO and the Advisory Council on Historic Preservation. The purpose of the Programmatic Agreement would be to ensure compliance with Section 106, by ensuring development and implementation of measures to protect resources from the effects of exposure when reservoir levels go below historic minimum levels. It is expected that the terms of the agreement would require Reclamation to implement measures that result in mitigation of potential effects to levels considered less than significant by SHPO and the National Advisory Council on Historic Preservation.</p>	Less than significant.	3.6-2: Develop and Implement Programmatic Agreement with SHPO Regarding Potential Indirect Impacts at Shasta Reservoir
Water surface elevation at Trinity Reservoir.		
<u>Action Alternatives Compared to the Existing Condition.</u> Hydrologic modeling results indicate that the Action Alternatives would not result in any significant difference in reservoir elevations compared to the existing condition.	Less than significant	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> The modeling results indicate that future Trinity Reservoir levels under the Action Alternatives would not result in a higher maximum elevation or a lower minimum elevation than No Action/No Project Alternative end-of-month levels.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> The cumulative condition maximum water surface elevation would be similar to the existing condition. Minimum end-of-month levels would be lower than the existing condition in certain months but would not fall below the minimum end-of-month level simulated for the existing condition. The cumulative condition would not be expected to result in increased exposure of cultural resources.	Less than significant.	
Flows of the upper and lower Sacramento River.		
<u>Action Alternatives Compared to the Existing Condition.</u> Hydrologic modeling results indicate that the Action Alternatives would not result in any significant difference in river flows of the upper or lower Sacramento River compared to the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project Alternative (Future).</u> Hydrologic modeling indicates that maximum monthly mean river flows of the upper and lower Sacramento River would be similar under the Action Alternatives and No Action/No Project Alternative conditions.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
CULTURAL RESOURCES (Section 3.10) (Continued)		
Flows of the upper and lower Sacramento River (continued).		
<p><u>Cumulative Condition.</u> For the upper Sacramento River, under the cumulative condition, summer month increases in maximum monthly mean river flows would not be above peak river flows of the existing condition and the reduction of minimum monthly mean river flows would not be below the lowest river flows of the existing condition. Overall, the cumulative condition would not result in increased exposure or damage to cultural resources.</p> <p>Lower Sacramento River results indicate that the cumulative condition would result in maximum monthly mean river flows that are similar or lower than existing condition flows. Minimum river flows would potentially be reduced below existing condition minimum monthly mean flows, but no significant cultural resources would be expected to be affected within the lower stretch of the Sacramento River.</p>	Less than significant.	
Water surface elevation at Oroville Reservoir.		
<p><u>Action Alternatives Compared to the Existing Condition and No Action/No Project Alternative (Future).</u> The Action Alternatives would not result in substantial changes in elevation at Oroville Reservoir relative to the existing condition or to the No Action/No Project Alternative (future). Any small changes that may occur would be considered to represent less-than-significant impacts upon cultural resources of Oroville Reservoir.</p>	Less than significant.	None proposed.
<p><u>Cumulative Condition.</u> Compared to the existing condition, the cumulative condition would result in substantially lower end-of-month elevation for most months of the year. Long-term end-of-month elevation reductions for Oroville Reservoir would range from six to 18 feet, and, in individual years, reductions of up to 76 feet in end-of-month elevation would occur. Such reductions in reservoir elevation potentially could result in exposure or damage to known or unknown cultural resources within the reservoir.</p>	Potentially significant.	
<p><u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u></p> <p>No substantial changes in reservoir elevation would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives' incremental contribution to the cumulative condition would not be considerable.</p>	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
CULTURAL RESOURCES (Section 3.10) (Continued)		
Flows of the Feather River.		
<u>Action Alternatives Compared to the Existing Condition and No Action/No Project Alternative (Future).</u> The Action Alternatives would not result in substantial changes in flow in the Feather River relative to the existing condition or to the No Action/No Project Alternative (future) that would affect cultural resources. Any small changes that may occur would be considered to represent less-than-significant impacts upon cultural resources of the lower Feather River.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Compared to the existing condition, the cumulative condition would result in changes in flow ranging from a reduction of 5.7 percent in March to an increase of 36.4 percent increase in August. These flow fluctuations potentially could increase the exposure and damage to known or unknown cultural resources within the Feather River floodplain.	Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> No substantial changes in river flows would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to cumulative effects. The Action Alternatives' incremental contribution to the cumulative condition would not be considerable.	Less than significant.	None proposed.
POWER SUPPLY (Section 3.11)		
DIVERSION-RELATED IMPACTS		
Note: There are no facilities-related power supply impacts.		
<u>No Action/No Project Alternative Compared to Existing Condition.</u> The increased pump station diversion under the No Action/No Project Alternative would be less than evaluated for the Action Alternatives (see below). Based on the evaluation of modeling performed for the Action Alternatives, it is expected that the No Action/No Project Alternative would not result in significant effects on gross hydropower generation, gross hydropower dependable capacity or upon pumping energy requirements.	Less than significant.	None proposed.
Gross hydropower generation.		
<u>Action Alternatives Compared to the Existing Condition.</u> The impact on annual gross generation is estimated to average reduction by 8 gigawatthours (GWh), or less than 0.2 percent.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project (Future).</u> Under future conditions, the effect of the Action Alternatives on CVP gross hydropower generation would be a reduction of up to 7 GWh, or a less than 0.2 percent loss of generation compared to the No Action/No Project Alternative.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Compared to the existing condition, the cumulative condition would result in an annual reduction of up to 356 GWh, representing a seven percent loss of hydropower generation. This would have significant economic results.	Significant.	

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
POWER SUPPLY (Section 3.11) (Continued)		
Gross hydropower generation (continued).		
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> The assessment of the Action Alternative incremental contribution to the cumulative condition indicates up to an average annual reduction of 9 GWh, representing less than 0.2 percent of annual generation.	Less than significant	None proposed.
Gross hydropower dependable capacity.		
<u>Action Alternatives Compared to the Existing Condition.</u> Implementation of an Action Alternative would result in, at most, a less than one percent reduction in gross dependable capacity compared to the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project (Future).</u> Under future conditions, the effect of the Action Alternatives on gross hydropower dependable capacity would be reduced by up to two percent at most compared to the No Action/No Project Alternative.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Compared to the existing condition, cumulative conditions would result in a reduction of total dependable capacity of up to 24 percent (August). This would have significant results.	Significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> The assessment of the Action Alternative incremental contribution to the cumulative condition indicates a very small contribution to the future condition with at most a less than one percent of the median and less than two percent reduction of total dependable capacity..	Less than significant.	None proposed.
Folsom and EID pumping energy requirements.		
<u>Action Alternatives Compared to the Existing Condition.</u> The Action Alternatives would result in lower Folsom Reservoir elevations creating the need for greater amounts of energy to pump water at the Folsom and EID pumping plants. Compared to the existing condition, under the Action Alternatives, the increased energy requirement would be 1.4 percent greater at Folsom and 0.1 percent greater at EID.	Less than significant.	None proposed.
<u>Action Alternatives Compared to No Action/No Project (Future).</u> The anticipated future increased energy requirements for the Action Alternatives compared to the No Action/No Project Alternative would be 0.7 percent at Folsom and less than 0.1 percent at EID.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> Compared to the existing condition, the cumulative condition would result in increased energy requirements that double existing Folsom pumping plant needs and would be six times greater for the EID pumping plant needs. This would be significant.	Significant.	

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
POWER SUPPLY (Section 3.11) (Continued)		
Folsom and EID pumping energy requirements (continued).		
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> The assessment of the Action Alternative incremental contribution to the cumulative condition indicates that increased energy requirements at Folsom, 1.8 percent, and at EID, 0.1 percent, would be relatively minor and would not represent a significant contribution to the cumulative condition.	Less than significant	None proposed.
Power at Oroville Reservoir.		
<u>Action Alternatives Compared to the Existing Condition and the No Action/No Project Alternative (Future).</u> The Action Alternatives would not result in substantial changes in elevation at Oroville Reservoir relative to the existing condition or to the No Action/No Project Alternative (future) condition. Any small changes that may occur would be considered to represent less-than-significant impacts upon power supply resources of Oroville Reservoir.	Less than significant.	None proposed.
<u>Cumulative Condition.</u> The cumulative condition would result in a reduction in the long-term average reduction in storage of up to 8.5 percent. The effects of SWP demands on hydropower dependable capacity and energy requirements for pumping at Oroville Reservoir are uncertain. Due to this uncertainty, potential power supply cumulative impacts would be considered potentially significant.	Potentially significant.	
<u>Action Alternatives' Incremental Contribution to the Cumulative Condition.</u> No substantial changes in reservoir elevation would be anticipated under the cumulative condition relative to the future base. The increase in future SWP demands is the primary factor leading to the cumulative effects. The Action Alternatives' incremental contribution to the cumulative condition would not be considerable.	Less than significant.	None proposed.
LAND USE (Section 3.12)		
FACILITIES-RELATED IMPACTS		
Note: There are no diversion-related land use impacts.		
Change in existing or planned land use designations resulting in incompatibility with local or regional characteristics or leading to displacement of homes or businesses.		
<u>No Action/No Project Alternative.</u> No change from existing condition.	Less than significant.	None proposed.
<u>Action Alternatives.</u> The types of land uses would not change although the intensity and level of activity would increase from existing or No Action/No Project Alternative conditions due to year-round, rather than seasonal operations of the water supply facilities and associated recreation-related influx of people. No homes or businesses would be displaced. Anticipated increased use of the project area would be consistent and compatible with local and regional characteristics.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
LAND USE (Section 3.12)		
Change in existing or planned land use designations resulting in incompatibility with local or regional characteristics or leading to displacement of homes or businesses (continued).		
<u>Upstream Diversion Alternative.</u> The same water supply utility-related activities as under the Proposed Project (above).	Less than significant.	None proposed.
Conflict with local or regional planning policies, goals, or objectives.		
<u>No Action/No Project Alternative.</u> Continued operation of the seasonal pump station would be in direct conflict with the State Attorney General's office direction to close the Auburn Dam bypass tunnel and would result in potential inconsistencies with Reclamation and CDPR long-range planning goals for the Auburn SRA.	Significant, unavoidable.	No feasible mitigation available under this alternative.
<u>Action Alternatives.</u> Development of the year-round pump station would not result in conflict or inconsistency with Reclamation policies governing land use at the project site. Closure of the bypass tunnel would be consistent with the State Attorney General Office's direction to Reclamation, as compared to the continued conflict that would occur under the No Action/No Project and Upstream Diversion Alternatives. Introduction of interim public river access sites would be consistent with state goals for the Auburn SRA.	Less than significant/potentially beneficial.	None proposed.
<u>Upstream Diversion Alternative.</u> Similar to the No Action/No Project Alternative, this alternative would be in direct conflict with the State Attorney General's office direction to close the Auburn Dam bypass tunnel and would result in potential inconsistencies with Reclamation and CDPR long-range planning goals for the Auburn SRA.	Significant, unavoidable.	No feasible mitigation available under this alternative.
Cumulative Facilities-Related Impacts		
The Proposed Project and other future actions, specifically potential future expansion of the Auburn pump station and potential increased recreation development within the canyon, would change the intensity of water supply utility and recreation uses in the area; no land use or zoning designation changes would be required or anticipated. These cumulative activities would be considered consistent with long-range planning goals and would not result in policy conflicts. Certain land ownership and responsibilities would have to be arranged and contracted between appropriate entities.	Less than significant/potentially beneficial.	

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
GEOLOGY AND SOILS (Section 3.13)		
FACILITIES-RELATED IMPACTS		
Note: There are no diversion-related geology and soils impacts.		
Slope stability and geologic substructure changes that affect human safety.		
<u>No Action/No Project Alternative.</u> Seasonal pump station installation and removal activities would not differ substantially or result in disturbance of previously undisturbed areas as compared to the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives.</u> Construction would involve extensive grading, excavation, and blasting to develop sites for the pump station facilities and to restore the river channel. Ground surface modification would result in the temporary creation of potentially unstable slopes. Restoration of the river channel would be considered a potentially beneficial aspect of this alternative that would not take place under the No Action/No Project or Upstream Diversion alternatives.	Less than significant/potentially beneficial.	3.10-1: Minimize the Potential for Increased Erosion and Slope Instability During Project Construction.
<u>Upstream Diversion Alternative.</u> Existing unstable slopes would be temporarily disturbed and present additional localized geologic hazards as compared to the existing or No Action/No Project Alternative. Substantially less ground-disturbance would occur under this alternative compared to the Proposed Project. This alternative would not result in restoration of the river channel.	Less than significant.	3.10-1: Minimize the Potential for Increased Erosion and Slope Instability During Project Construction.
Increased public exposure or property damage due to geologic hazards.		
<u>No Action/No Project Alternative.</u> Public use of the river would continue to be restricted and no additional facilities would be constructed, as under the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives.</u> Extensive earthwork would create temporary but potentially hazardous conditions as compared to the existing or No Action/No Project Alternative conditions. Public access in the project area would be limited to and directed away from active construction areas throughout the construction period, thereby minimizing exposure to temporarily unstable slope or ground surface conditions. Increased public use of and passage through the area would potentially increase exposure of the general public to existing geologic hazards (landslides and unstable slopes).	Construction: Less than significant. Public River Access: Less than significant.	None proposed.
<u>Upstream Diversion Alternative.</u> The potential for increased public exposure to geologic hazards is similar to the Proposed Project, although, because the river channel would not be restored, there would be less area disturbed/unstable during construction. Public access and passage through the project area would not be expected to increase as under the Proposed Project.	Less than significant.	None proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
GEOLOGY AND SOILS (Section 3.13) (Continued)		
Cumulative Facilities-Related Impacts		
All future planned projects involving grading, excavation or blasting within the North Fork American River canyon would have the potential to result in slope stability and/or related public safety concerns. Each of these activities/projects would be required develop and implement site-specific measures to stabilize slopes following construction and to ensure protection of public safety. Because the Action Alternatives and future actions would include such measures, there would not be a significant cumulative impact upon geology and soils resources.	Less than significant.	
TRANSPORTATION AND CIRCULATION (Section 3.14)		
FACILITIES-RELATED IMPACTS		
Note: There are no diversion-related transportation and circulation impacts.		
Increase in traffic levels on Interstate 80, Highway 49, Auburn-Folsom Road, Pacific Avenue, and Maidu Drive.		
<u>No Action/No Project Alternative.</u> Implementation of the No Action/No Project Alternative would not change the number of project-related trips made to the site or within the study area, compared to the existing condition.	Less than significant.	None proposed.
<p><u>Action Alternatives.</u> Maximum construction-related trip generation would result in up to 146 daily trips on local roadways for workers and supply deliveries, or 116 daily trips over the existing or No Action/No Project Alternative conditions.</p> <p>Construction-related trips could potentially conflict with residential and commercial vehicular, bus, or bicycle traffic on local roadways, contributing to more frequent congestion or safety hazards than would occur under the existing or No Action/No Project Alternative conditions.</p> <p>Operation/maintenance of the year-round pump station would generate only up to eight daily trips that would be easily accommodated on local roadways. This results in six more daily trips than under existing or No Action/No Project Alternative conditions.</p> <p><u>Action Alternatives.</u> Use of the public river access sites would generate up to 214 recreation-related vehicle trips on a peak summer day resulting in a noticeable seasonal influx of traffic, as compared to the existing condition and the No Action/No Project or Upstream Diversion Alternatives which do not include development of these sites. Roadway capacity and LOS would not be impaired.</p>	<p>Construction: Less than significant.</p> <p>Operation and Maintenance: Less than significant.</p> <p>Proposed Project - Public River Access: Less than significant.</p>	<p>3.7-1: Develop and Implement a Construction Traffic Access Management Plan</p> <p>3.7-2: Provide Information Regarding New Public River Access</p>

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
TRANSPORTATION AND CIRCULATION (Section 3.14) (Continued)		
Cumulative Facilities-Related Impacts		
Construction at the project site may impact the local roadway system, and in combination with other local projects could interfere with established traffic patterns or cause a safety hazard. The Action Alternatives' incremental contribution to the cumulative condition could be potentially significant should the construction timeframes overlap. <i>Public River Access</i> - The seasonal influx of recreation traffic along Maidu Road would add to the anticipated cumulative increases in travel associated with residential developments. These increases would not exceed roadway capacity or adversely affect roadway LOS.	Construction: Less than significant. Public River Access: Less than significant.	No additional measures proposed.
AIR QUALITY (Section 3.15)		
FACILITIES-RELATED IMPACTS		
<i>Note: There are no diversion-related air quality impacts.</i>		
Increase in ozone precursor concentrations during project construction.		
<u>No Action/No Project Alternative.</u> Under the No Action/No Project Alternative, the ozone precursors and particulate matter generated during installation and removal of the seasonal pump station and maintenance trips to the project site would not be expected to change from the existing condition.	Less than significant.	None proposed.
<u>Action Alternatives.</u> Construction of the Action Alternatives would result in increased ozone precursor (ROG and NO _x) air pollutant emissions throughout the construction period at levels higher than those under the existing and No Action/No Project Alternative conditions. Proposed Project. Ozone precursor emissions were estimated as: ROG - 2,633 pounds per quarter NO _x - 26,711 pounds per quarter Upstream Diversion Alternative. Ozone precursor emissions were estimated as: ROG - 891.6 pounds per quarter NO _x - 6,121.7 pounds per quarter.	Proposed Project - Construction: ROG Emissions - Less than significant. NO _x Emissions - Potentially significant and unavoidable.	3.8-1: Minimize Ozone Precursor Emissions During Project Construction No mitigation measures are proposed for Action Alternatives operation or maintenance activities or for Proposed Project public river access.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
AIR QUALITY (Section 3.15)		
Increase in PM₁₀ concentrations during project construction.		
<p><u>Action Alternatives.</u> Construction of the Action Alternatives would result in PM₁₀ air pollutant emissions throughout the construction period at levels higher than those under the existing and No Action/No Project Alternative conditions.</p> <p>Proposed Project PM₁₀ emissions were estimated as 2,117.5 pounds per quarter</p> <p>Upstream Diversion Alternative PM₁₀ emissions were estimated as 557 pounds per quarter</p>	Less than significant.	3.8-2: Minimize PM ₁₀ Emissions During Project Construction
Increase in vehicular emissions due to project operation and maintenance.		
<u>No Action/No Project Alternative.</u> No change in operation and maintenance trips.	Less than significant.	None proposed.
<u>Action Alternatives.</u> Year-round operation and maintenance of the pump station facilities would generate up to six additional trips to the project site. Under the Upstream Diversion Alternative, this represents a less-than-significant increase in vehicular air emissions.	Less than significant.	None proposed.
<u>Proposed Project.</u> The Proposed Project total vehicle trips include those due to public river access plus operations for a total of up to 214 trips on a peak area use day. Anticipated levels of air pollutant emissions would remain well below the local APCD thresholds of significance for ROG, NO _x , and PM ₁₀ .	Less than significant.	None proposed.
Exposure of sensitive receptors to significant amounts of air pollutants.		
<u>Action Alternatives.</u> With the exception of NO _x emissions generated during construction of the Proposed Project, construction and operation emissions for the Action Alternatives would be below local APCD significance thresholds, although higher than the emissions associated with existing or No Action/No Project Alternative conditions.	<p>Exposure to ROG and PM₁₀:</p> <p>Less than significant.</p> <p>Exposure to NO_x:</p> <p>Proposed Project - potentially significant and unavoidable.</p> <p>Upstream Diversion Alternative - less than significant.</p>	<p>3.8-1: Minimize Ozone Precursor Emissions During Project Construction</p> <p>3.8-2: Minimize PM₁₀ Emissions During Project Construction</p> <p>3.8-3: Minimize Potential for Disturbance of Asbestos and Exposure of Construction Personnel or General Public During Project Construction</p>
Cumulative Facilities-Related Impacts		
All local projects could affect air quality during construction and/or operation phases. Each project would be required to incorporate all feasible mitigation measures recommended or required by local APCDs, thereby minimizing air quality effects to the extent practicable. However, because future projects, similar to the Proposed Project, may not feasibly reduce all air quality emissions below APCD significance thresholds, the potential for significant cumulative air quality impacts exists.		

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
AIR QUALITY (Section 3.15) (Continued)		
Cumulative Facilities-Related Impacts (Continued)		
<i>Proposed Project's Contribution to the Cumulative Condition.</i> Because the further reduction of NO _x emissions through implementation of adaptive construction management activities cannot be quantified, it is uncertain whether these emissions can be reduced below the Placer County APCD's quarterly emissions significance threshold. This is considered a considerable contribution to potential cumulative air quality impacts.	Potentially significant and unavoidable.	No additional mitigation proposed.
NOISE (Section 3.16)		
FACILITIES-RELATED IMPACTS		
<i>Note: There are no diversion-related noise impacts.</i>		
Increase in ambient noise levels during construction and operation of the alternatives.		
<p><u>No Action/No Project Alternative.</u> Installation/removal of the seasonal pump station facilities results in short-term increases in ambient noise levels. These noise levels do not exceed local noise ordinances or CDPR standards.</p> <p>Operation of the seasonal pumps (all four pumps) would result in a potential noise level of up to 55 dB exceeding both the City of Auburn night noise levels (45 dB, 10:00 p.m. to 7:00 a.m.) and the Placer County noise standard (50 dB, all times) for residential land uses. Additionally, noise levels at the nearest recreation trail segments could be as high as 60 dB.</p> <p>Maintenance activities for the seasonal pump station would be similar to the existing condition and would not be expected to generate noise levels that exceed local noise standards.</p>	<p>Installation and Removal: Less than significant.</p> <p>Operation: Potentially significant and unavoidable.</p> <p>Maintenance: Less than significant.</p>	<p>Installation and Removal: None proposed.</p> <p>Operation: No feasible mitigation available for potentially significant operation noise level increases.</p> <p>Maintenance: None proposed.</p>
<p><u>Action Alternatives.</u> Construction of the Action Alternatives would result in increased ambient noise levels throughout the construction period due to use of explosives, construction vehicle traffic, and high noise level-generating construction equipment potentially impacting local residents and recreationists (trails and Auburn Recreation District campground) compared to existing and No Action/No Project Alternative conditions.</p> <p>Operation of the pumps would potentially result in noise levels of up to 90 dBA at a distance of 10 feet resulting in potential exceedances of local noise standards without additional design considerations. Because up to two additional pumps would be operated under the Action Alternatives as compared to existing or No Action/No Project Alternative conditions (which already may exceed noise level standards), this is a potentially significant impact.</p> <p>Maintenance of the pump station facilities would not generate noise levels in excess of those that occur under the existing condition or those anticipated under the No Action/No Project Alternative condition.</p>	<p>Construction: Less than significant.</p> <p>Operation: Less than significant.</p> <p>Maintenance: Less than significant.</p>	<p>3.9-1: Minimize Noise During Project Construction</p> <p>3.9-2: Minimize Operational Noise Levels by Enclosing Pumps</p>

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
NOISE (Section 3.16) (Continued)		
Increase in ambient noise levels during construction and operation of the alternatives (continued).		
<u>Proposed Project.</u> Use of the public river access sites would generate additional recreation-related noise within the study area compared to the existing condition and to the No Action/No Project and Upstream Diversion alternatives which do not include development of such areas or uses in the study area.	Proposed Project - Public River Access: Less than significant.	3.9-3: Minimize Noise Levels Associated with Public Use of River Access Features
Cumulative Facilities-Related Impacts		
In the future, ambient noise levels near the pump station site and in adjacent neighborhoods likely would increase as a result of increased recreation activity and residential development in Auburn. These anticipated land use changes and associated noise would be consistent with the character of the area and would not be expected to be significant. It is assumed that individual projects would be subject to the same noise restrictions as the pump station alternatives (limits on timing of noisy activity) and, therefore, adequately mitigated to prevent cumulative impacts.	Less than significant.	
PUBLIC HEALTH AND WORKER SAFETY (Section 3.17)		
FACILITIES-RELATED IMPACTS		
<i>Note: There are no diversion-related public health and worker safety impacts.</i>		
<u>No Action/No Project Alternative.</u> There are no hazardous materials currently stored on site and the No Action/No Project Alternative would not substantially change either public health or worker safety conditions compared to existing practices for seasonal pump station installation/removal and operation/maintenance.	Less than significant.	None proposed.
Increased project construction personnel and public exposure to commercially available hazardous materials or explosives.		
<u>Action Alternatives.</u> During construction, use and storage of commercially-available materials (diesel fuel, gasoline, paint, solvents, etc.) that could be flammable, volatile, or possess other hazardous characteristics would be greater than under existing or No Action/No Project Alternative conditions, increasing project construction personnel and public exposure to related hazards. The storage locations and amount stored on site at a given time would not differ substantially between the Action Alternatives. Implementation of the environmental protection measures would minimize potentially significant adverse public health impacts associated with increased use of potentially hazardous materials at the project site.	Less than significant.	3.10-2: Minimize Potential for Increased Exposure to Hazardous Materials or Fire Risk During Project Construction

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
PUBLIC HEALTH AND WORKER SAFETY (Section 3.17) (Continued)		
Increased project construction personnel and public exposure to asbestos.		
<p><u>Action Alternatives.</u> Excavation and blasting activities under the Action Alternatives could release asbestos fibers, not released by earthwork activities associated with existing or No Action/No Project Alternative conditions.</p> <p><u>Proposed Project.</u> A much larger amount of earthwork and blasting would be involved under the Proposed Project as compared to the Upstream Diversion Alternative. The Environmental Protection Plan construction management activities would be specific to the selected alternative. Implementation of the environmental protection measures would minimize potentially significant adverse public health impacts associated with increased exposure to asbestos fibers from blasting and earthwork activities.</p>	Less than significant.	3.8-3: Minimize Potential for Disturbance of Asbestos and Exposure of Construction Personnel or General Public During Project Construction
Increased project construction personnel and public exposure to fire hazards.		
<p><u>Action Alternatives.</u> During construction, use and storage of commercially-available materials (diesel fuel, gasoline, paint, solvents, etc.) that could be flammable, volatile, or possess other hazardous characteristics would be greater than under existing or No Action/No Project Alternative conditions, exposing construction workers to related hazards. The storage locations and amount stored on site at a given time would not differ substantially between the Action Alternatives. Implementation of the environmental protection measures would minimize potentially significant adverse worker health impacts associated with increased exposure to hazardous and explosive materials during project construction.</p> <p><u>Proposed Project.</u> Increased public use of the Auburn Dam and Oregon Bar areas at the site and of the North Fork American River from the confluence and downstream past the project areas introduces an increased fire risk associated with human activity in the canyon.</p>	Less than significant.	<p>3.10-2: Minimize Potential for Increased Exposure to Hazardous Materials or Fire Risk During Project Construction</p> <p>3.10-4: Minimize the Risk of Public Exposure to Fire Hazards During Project Operations</p>
Cumulative Facilities-Related Impacts		
<p><u>Action Alternatives.</u> Contribution to Facilities-related Cumulative Public Health and Worker Safety Conditions. Implementation of the selected alternative would require compliance with all local, state and federal regulations governing the transport, delivery, transport, use, storage, and accident response activities relative to the project to protect public health and worker safety. It is expected that regulatory agencies would require the same level of public health and worker safety protection of other planned/proposed projects in the study area thereby minimizing the potential for cumulative public health or worker safety effects.</p>	Less than significant.	No additional measures proposed.

Table S-5 (Continued)		
Summary of Impacts and Environmental Protection and Mitigation Measures		
Impact Issue	Impact Significance	Environmental Protection and Mitigation Measures
OTHER IMPACT CONSIDERATIONS (Section 3.18)		
<u>Indian Trust Assets.</u> The Proposed Project or alternatives would not be expected to result in adverse impacts to ITAs.	Less than significant.	None proposed.
<u>Essential Fish Habitat.</u> Essential fish habitat (specifically, chinook salmon) within the regional study area exists on the lower American River from the mouth to Nimbus Dam; such habitat also exists on the Sacramento River and its tributaries from the Delta upstream to Keswick Reservoir. The potential for the alternatives to adversely effect such habitat would be determined during consultation with NMFS. Appropriate terms and conditions to prevent impacts upon essential fish habitat would be developed during the NMFS consultation.	Proposed Project or alternatives are not likely to adversely affect EFH for fall-run chinook salmon.	
<u>Environmental Justice.</u> No disproportionately high or adverse environmental or human health impacts on minority or low-income communities have been identified for this project.	Less than significant.	None proposed.
<u>Irreversible and Irrecoverable Use of Resources.</u> Irreversible commitments of resources would include construction materials, labor, land area, and energy consumed during construction, operation and maintenance activity. <u>Upstream Diversion Alternative.</u> Up to 0.11 acre of wetlands would be permanently lost under this alternative. Wetland acreage would be mitigated/replaced according to terms of the Corps' consultation and permitting process.	Less than significant.	3.2-4: Restoration of Permanent Riparian Wetland and Pond Vegetation/Habitat Loss
<u>Short-term Uses of the Environment Versus Long-term Productivity.</u> The increased reliability and availability of water supplies for PCWA would meet current and projected water demands, thus supporting economic viability within the project service area. The project would have potential short-term impacts to air quality, terrestrial vegetation and habitats, recreation, and noise levels, but would not be expected to alter the long-term productivity of the natural environment.	Less than significant.	None proposed.
<u>Climate Change.</u> While the long-term environmental consequences associated with climate change are speculative at best, the location and design specifications for the Action Alternatives are expected to withstand a range of climate events, such as increased river flows.	Less than significant.	None proposed.